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ABSTRACT

A study examined the practice and effects of vocational education in 14 classrooms in 8 Minnesota public schools. Data were collected from classroom observations; interviews with students, teachers, administrators, and counselors; and written survey instruments assessing student career development, vocational maturity, and demography. Vocational education was found to help students build competence, apply basic skills, think through problems, learn technical skills, explore life roles, learn to work together, express themselves, extend themselves to the community, and practice life roles. Moreover, within the context of secondary education, vocational education was found to provide a change of pace from other experiences in the comprehensive high school, let students experience an egalitarian atmosphere and cooperation and teamwork, provide learning activities relevant to students' lives, and help students develop self-esteem. However, vocational students were frequently confronted with mixed perceptions by other students and by teachers about the value of their vocational education. It was concluded that the purposes of vocational education must be clarified and that students must be challenged beyond their expectations and given new areas for exploration without becoming so specialized as to narrow their opportunities. (Appendixes include a transcription of an observation segment, a blank observation record form, the various interview schedules, the student survey instrument, and descriptions of the sites studied.) (MN)

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Purposes of Vocational Education in Secondary Schools of Minnesota:

Some Insights from Current Practice

Minnesota Research and Development Center
for Vocational Education
Department of Vocational and Technical Education
College of Education
University of Minnesota
St. Paul, Minnesota 55108

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Purposes of Vocational Education in Secondary Schools of Minnesota: Some Insights from Current Practice

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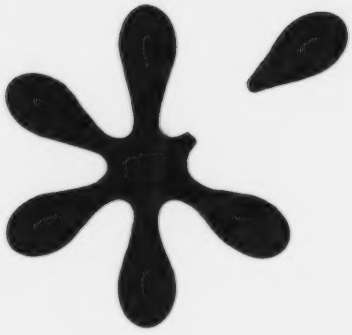

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Many other individuals were involved in the conduct of this study. First, thanks is due to Thomas Strom, Manager of Secondary Vocational Education in the Minnesota Department of Education, for his trust and patience with a study that took almost two and one-half years from initial discussions to final report. We thank a group of faculty in the Department of Vocational and Technical Education who reacted to our initial research plans and data collection strategy--Forrest Bear, Gary McLean, Roland Peterson, and Brandon Smith. Special thanks in the research design also is due Marion Dobbert, Department of Educational Policy and Administration and Harvey Sarles, Department of Anthropology at the University of Minnesota. Both spent considerable time with us in reviewing and making suggestions on how best to go about the research process including accompanying us to schools in the actual data collection--in hindsight, their advice proved to be very wise. James Knight, a visiting professor from Ohio State University and Jerry McClelland, Department of Vocational and Technical Education at the University of Minnesota, worked as substitute observers when one of us were not able to go.

Among the research team, Patricia Copa coordinated our training in procedures and set up our data filing system. Steve Scholl coordinated operations of the project including the processing and analysis of the data which amounted to several thousand pages of notes and questionnaires. Marsha Rehm assisted us in adding new words to our language from the arts and humanities as a way to make our descriptions more sensitive and meaningful. Linda Ernst was our editor--she has read and pondered over the contents of this report more than any other person. Without her editing skills, persistence, and good nature, I don't know how (or when) this final report would have come into being. From the rest of us, thanks Linda! All of the authors except Marsha Rehm were involved in the actual observations and data collection at school sites. The development of chapters of this report addressing particular purposes of vocational education was assigned among the staff with the person responsible noted in the footnote to the chapter titles. Overall direction for the study fell to Jane Plihal and myself.

Preparation of this report involved the transcription of many hours of taped interviews, and keyboarding of observation notes and questionnaires--several file drawers of paper. Then came the entry of this data into computer

files, coding, printouts, photocopying--another paper nightmare. Last there was draft after draft of this report. The secretarial staff which did this work with cheerfulness, persistence, and accuracy were: Pat Noeldner, LaRayne Kuehl, Mary Gupta, Karen Schuller, Merri Fromm, and Nora Gille. Working with this staff were people in other units at the University who made it possible for us to process our data efficiently using computers; these include Janice Jannett and Ron Schultz with the St. Paul Campus Computer Center, and Patsy McGlynn and Denise Wilson with the Department of Administrative Information Services. The art work on the inside cover page was prepared by Jim Kiehne.

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George H. Copa
St. Paul
June, 1986

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CHAPTER I

CONTEXT FOR STUDY

The purpose of this research was to form a beginning description of the subject matter and methods of vocational education as it is actually practiced in secondary schools in Minnesota. The description was to serve in clarifying the purpose of vocational education in secondary schools. Clarification was thought to be essential in developing more sensitive measures and indicators with which to plan, review and provide public information about these programs. This need has been identified by the Minnesota Research and Development Review Committee as being of very high priority to improving vocational education in Minnesota.

Background Considerations

A beginning toward producing the needed description was deemed necessary in directing further study and to enhancing understanding of what current practice is like and why it is so. This understanding, in some depth (certainly more than was possible in this initial study), is essential to considerations of how these educational programs might improve--both in suggesting what is appropriate and also what is feasible.

Initial impetus for this study stems from earlier research to describe the employment and further education effects of secondary vocational education programs in Minnesota (Copa & Forsberg, 1980). This earlier work relied on student follow-up information to document the effects of program participation. While the effects were substantial and positive for secondary vocational education, it was felt that a part of the effects story was still missing. Among those who teach in and have administrative responsibility for vocational education at the secondary level, there was the feeling that the effects were even more substantial than was able to be documented by follow-up information and that the effects were more comprehensive--had more dimensions and complexities.

With this perspective in mind, the proposal for this study was developed and refined. At the time, many of the reform reports on the nation's secondary schools (as well as reports specifically focused on Minnesota schools) were being reported or at least well into their data collection phases. The lack of attention to vocational education in these reports, and with it the implied de facto assignment of low priority to vocational education, added significance and timeliness to the need to explore the effects of vocational education as a component of the secondary school curriculum. The outcome was the design of a research study which would take a "fresh look" at the practice of vocational education in the secondary school, particularly as to its intended and immediate effects, as a basis for describing the purposes of these programs. The method selected, which is described in more detail in the next chapter, was drawn from anthropology--that of naturalistic inquiry. The goal was to produce a thick and rich description of actual practice in the schools by detailed observation of

classrooms and interviews with students and those who work in schools--teachers, administrators, counselors. From this description, analysis was to produce a more comprehensive picture, in both breath and depth, of the possible impact of secondary vocational education. This picture could then be used to propose more sensitive measures and indicators with which to plan, review, and provide public information about these programs.

Developing Perspective

Before going "into the field" with this study, it was felt it would be very very important to examine and expand the study staff's perspective on the potential purposes of vocational education, particularly in the context of the secondary school. The importance of this step relates to the purpose of this study and its methods. We were to explore the purpose of vocational education in the secondary school using a method that was particularly designed to be open to all possibilities. It was to uncover fresh ideas and dimensions for the impact of these programs. But with all this freedom to explore comes the needed preparation in "mind opening" for what it might be possible to see, select for scrutiny, lift up for others to think about, and direct future research efforts. To scientists doing naturalistic inquiry, this process is referred to as going into the field "theory laden" rather than naive or "empty headed."

The process of developing perspective or becoming theory laden was accomplished by organizing a staff study group to read, review, and discuss the various purposes vocational education might serve in the secondary school. The results of the study turned out to be substantial and contributed to knowledge on its own. This information has already been published as a separate research report (Copa, Daines, Ernst, Knight, Leske, Persico, Plihal, & Scholl, 1985). In summarizing the report here, we will draw directly from a paper prepared for summary purposes by Jane Plihal (a member of the study staff and project co-director) for presentation at a seminar entitled, "Vocational Education in the High School," sponsored by the Minnesota State Advisory Council for Vocational Education, Minnesota Department of Education and the Department of Vocational and Technical Education at the University of Minnesota in December, 1984.

Initial steps. Our study group began by reading an article in Fortune magazine entitled, "Vocational Education That Works." Contrary to the title, Sewell, the author, thought that vocational education wasn't working very well at all, especially in the secondary school. Some of the claims made by Sewell about vocational education were that it:

--lacks common and focused goals,

--lacks up-to-date equipment,

--is inappropriately tailored to students' level of development,

--lacks rigorous standards,

--does not teach basic skills in mathematics, language, and science,

--is unrealistic in its objectives,

--lacks linkages to employers, and

--lacks qualified teachers.

As we discussed these claims, we kept coming back to questions about the purpose of vocational education in the secondary school because these criticisms would be legitimate only if one assumed certain purposes for vocational education. For example,

--How important is it to have the newest and most sophisticated technical equipment if the primary purpose of vocational education is to make academic education more relevant?

--How does one judge the qualifications of teachers without being clear about what the teachers are supposed to be achieving with students.

We realize that without a clear sense of purpose of vocational education, we are apt to ask the wrong questions about vocational education, to pay attention to the wrong factors, and to reach conclusions that lead us in wrong directions.

We set as the objective of our study group that of examining the purpose/s of vocational education in the secondary school. Actually, when we began our work, we said we were going to examine the purposes of secondary vocational education. We didn't get too far in our work before we decided that we needed to consider vocational education as part of the total educational system, not as a separate, independent entity--standing on its own. So, we switched to saying that we were examining the purpose/s of vocational education in the secondary school.

With this as our objective, we felt that we had to have a common understanding of what a purpose is so that we would be talking about the same thing and so that we would know a purpose when we came upon one or developed one of our own. From readings we did on the meaning of purpose, we came to an understanding that a purpose is an end-view--what we want to accomplish ultimately--which is arrived at by:

--understanding the context and history of a situation,

--considering consequences likely to result from achieving a purpose, and

--realizing that considerable effort is required to attain the end-view and full accomplishment is not assured.

Let's take an example. Suppose a family wants to build a new house. To achieve their purpose, the family has to form an idea of what kind of house they want, including the number, arrangement, and size of rooms. They have to have blueprints and specifications made. They have to investigate available sites, their price, their nearness to places of work and perhaps school facilities, and so on. And, of course, they have to take stock of their resources, including sources of credit. What started out as a desire for a new house turns into a purpose when all these factors are considered and effort is put forth. And, in the end, any number of factors could interfere with actually getting the house built.

A framework for study. The framework we developed to guide our work caused us to look at vocational education in the context of education overall, and then in the larger context of the culture or society of the times. At this point, we read all the current reports on the quality of the public schools--A Nation at Risk, A Place Called School by Goodlad, Action for Excellence, The Paideia Proposal by Adler, High School by Boyer, and a couple others which aren't as well known. We read these reports primarily to learn what they said about vocational education and what their findings and recommendations implied for vocational education.

To gain an historical perspective on vocational education, we read works of several authors who wrote early in the 1900's as well as some who wrote more recently. These authors include: Snedden, Prosser and Quicley, Venn, Evans, Dewey, Warmbrod, Silberman, Violas, and Swanson.

As we looked at what these leaders said about the purpose of vocational education, we found that they expressed a range of viewpoints and several of these views conflicted with one another. These are some of the conflicts or tensions we found in what people thought should be emphasized in vocational education:

--maintaining the status quo versus changing society,

--general education versus specific education,

--education versus training,

--technology versus human development, and

--efficiency versus equity.

Let's look at an example related to the technology-human development tension. We know that robots are being used more and more in industrial settings, and they say they'll be used in homes fairly soon. On the one hand, robots can free humans from performing routine, dull tasks. On the other hand, robots displace humans in the workforce and have the potential of exacerbating the unemployment problems we have.

If we consider the efficiency-equity tension, we know that what is equitable sometimes is not more efficient. Meeting individual student needs usually takes more resources than would be used if we treated all students the same and disregarded their special needs and interests. We realize that these are artificial dichotomies--that we don't have to have just one or the other, but these tensions do represent the very different points of view present in the literature about vocational education.

Next, we reviewed the work of leaders in each of the specific fields of vocational education--agriculture, business, home economics, industrial, and marketing education. We were concerned here with the purpose each specific field set for itself, the commonalities and uniquenesses among the purposes, and the resulting implications for the purpose of vocational education overall.

In order to consider how vocational education related to the broader context of education, we examined several 20th century perspectives on the purpose of education in general. Some of the authors we read were: Dewey, Whitehead, Peters, Schwab, Herbart, Dearden, Hirst, Kumarin, Friere, and Hegal.

Following our framework, we went on to look at what people were saying about the future--especially the economic, social, and technological trends they were projecting--and what these trends implied for the purpose and process of vocational education in the future. We read Naisbett's Megatrends, Capra's The Turning Point, Yankelovich's New Rules, Toffler's The Third Wave, and a few others.

Some purpose statements. At this point in our work and with the benefit of having studied all these writings, members of the study group individually developed statements about the purpose of vocational education in the secondary school. As you might expect, our individual purpose statements emphasized different ideas. Some placed the emphasis of vocational education on specific occupational preparation and included phrases such as:

--"assist in occupational development,"

--"function effectively in the occupational environment," and

--"begin to focus work interests."

Some focused on avocational purposes, including statements such as:

--"develop lifelong interests . . . hobbies . . . personal skills," and

--"help experience pleasures and challenges of study (of the world of work)."

The greatest emphasis was on a purpose that reflected a broad, integrated relation of vocational education with general education and a broad view of the development of human potential. For example:

--"contribute to the development of people,"

--"stimulate interest in and develop ability to make sense of the world of work," and

--"develop an understanding of the meaning of work."

Some of our statements about the purpose of vocational education emphasized the need to go beyond the status quo to develop students' critical consciousness or ability to question what is going on and act to improve conditions:

--"critically socialize individuals to manage the work aspects of their lives in a way that is to their benefit and that of the larger community, as is befitting in a democracy," and

--"commitment to transforming work environments to enable human and social development."

As we discussed the purpose statements which we each developed, we recognized that some ideas of key concepts appeared again and again, and we decided to turn our attention now to studying the meaning of these key words:

--development,

--individual differences,

--education,

--vocation,

--work, and

--ethics.

We spent considerable time reading and talking about these concepts because they seem basic to any purpose we can envision for vocational education.

Although we use these words all the time we rarely stop to think about what they mean and to check if others are thinking about these ideas in the same way we are. For example, some people think "vocation" is "a calling," some people think of "vocation" as "one's principal purpose in life," and yet others think "vocation" is a person's "specialized work role." And as we talked about the meaning of the word "vocation," the question was raised about whether or not work education would be a more accurate label for the field than is vocational education. We didn't arrive at any agreement on this, but the example illustrates the usefulness of thinking carefully about the language we use to express our purpose.

Contributions of vocational education. We concluded the work of the study group by identifying ways in which vocational education can contribute to the purpose of the secondary school and drawing several questions which we think still need consideration by vocational educators and others interested in the purpose of vocational education in the secondary school.

First, we have identified two primary ways in which vocational education can contribute to the overall purpose of the secondary school.

One way is by placing an emphasis on the use of skills and learning developed in other areas of the school curriculum to concrete situations. Vocational education provides numerous and "natural" opportunities for student to apply concepts and principles from other courses (e.g., mathematics, science, language) to problems and situations which they encounter in what they often refer to as "real life." Students' perceptions of these applications as authentic and relevant to their lives heightens their motivation for learning these basics and increases the likelihood that abstractions will make sense to and be remembered and used by students.

A second way in which vocational education can contribute to the overall purpose of the secondary school is by joining with other educators to help students develop and practice reasoning skills. A common perception of vocational

education is that it trains students to perform step-by-step tasks which require little, if any, thinking. Perhaps that perception is accurate; perhaps rote training is defensible in some cases, such as when a pianist plays scales to gain dexterity and when a typist repeats typing exercises to develop speed. These examples of rote practice help develop competence. However, what seems critical for students' development is a much greater emphasis on developing reasoning processes (e.g., problem solving, analysis, critique, synthesis) through the vocational education curriculum. To many people, vocational education's recitation of the value of only its "hands-on" experience is self-condemnation because it gives the impression to others that we think we can and do separate thinking from doing.

We also believe that vocational education can serve a unique purpose in the secondary school in several ways.

One relatively unique contribution is to help students seriously consider what they want their lives to be like--how work itself and interpersonal relations in the workplace and in the family can contribute to an integrated and meaningful sense of self and community. The point here is not career exploration (although that is important, too) but the understanding of the role of work in one's life. The process of examining work rewards and their relation to one's enjoyment of life should be part of the content of vocational education.

A second contribution is or could be to increase occupational opportunities for students. Vocational education can expand students' knowledge of occupational opportunities available to them, and it can help them imagine the unimaginable for themselves. Vocational education can serve to develop students' awareness of their previously hidden talents and an understanding of how those talents can be used and rewarded in the world outside of school. One type of accomplishment historically claimed by vocational education is that of developing students' skills so that they can, as Snedden said, enter a "vestibule to a vocation." Skill training increases occupational opportunities for students most when it develops basic understandings related to the skills and when these skills are generalizable to a variety of work situations and requirements.

A third fairly unique contribution of vocational education is or could be the nurturing of students' pride and enjoyment of work by helping them develop technique and an appreciation of technique. Technique is a method of accomplishing a desired aim; it is "doing it just right." Have you ever watched a carpenter drive a nail, or a chef chop an onion, or a farmer prepare a field for planting? That's technique. It develops through practice, and one of vocational education's characteristics, traditionally, is its devotion to practice. Vocational education can help students become attuned to the satisfaction experienced when technique is mastered and expressed.

Questions about purpose of vocational education. Next we turned our attention to questions about the purpose of vocational education in the secondary school which still need deliberation by participants in vocational education. Several questions remain far from resolved. These questions and some very brief comments to suggest the flavor of the dilemmas follow.

One question is: Who should vocational education serve in the secondary

school? Ideally, we want to serve all students. The purposes outlined are deemed desirable for all students to experience. The system of tracking students by standardized test scores and class stereotypes perpetuates inequities in society and limits the contributions vocational education can make to students' development. However, because we have limited resources--time, facilities, staff--we sometimes feel as though we can't serve all students and that probably we should be most concerned about students who are least likely to continue their education beyond high school so that they can gain skills which will equip them for employment. An argument for this point of view is that if vocational education does not serve these students, they won't be served by the public school system and they will be more likely to end up dropping out of school and dropping onto the public dole. Perhaps the question actually is: How can we serve the interests of all students in the school without shortchanging students who are least likely to continue their formal education?

A second question is: How important is the teaching of specific technical job skills in the public school? Should the public school be responsible for teaching specific technical job skills or should employers or should they both? Many employers state that they prefer to do their own training; some vocational educators argue that the technical skills which students develop in school give them a competitive edge in getting jobs. Related to this issue is the point that it is difficult--perhaps impossible--to learn about various careers and the meaning of work without the experience of learning specific job skills. We might want to teach these specific job skills not as an end in themselves but as a means to career exploration and an understanding of the role of work in one's life.

A third questions is: To what extent should vocational education in the secondary school be used to meet the occupation demands of society? Is vocational education merely a component in the "training system" for labor? How far can vocational education venture from this image and still expect special funding and attention.

A fourth question is: To what extent should vocational education direct its efforts toward social reform or changing society? Snedden argued that vocational education should not be concerned with reforming society--that that happened in the voting booth. Violas (1981), in contrast, said that "the schools should arm students against aspects of the world of work which lessen the human dignity of workers" (p. 151).

A question related to this is: To what extent should vocational education encourage students to consider the ethics of their work? Should vocational education encourage students to examine moral implications of their work? To question the ends toward which their work is directed--ends such as equity or inequity, peace or war, beauty or chaos, freedom or enslavement? Should we encourage commitment to fundamentals of a democratic society? What is our ethical responsibility as vocational educators and what is the ethical responsibility of those whom we educate?

A sixth question is: Does the public value vocational education in the school curriculum? Often vocational education is regarded as a second-rate operation in the school, just as students enrolled in vocational education

programs frequently are considered second class. Can or should vocational education strive to dispel these beliefs? If so, how? What are the consequences of not doing so?

And a last question which brings us right back to the basic concern of the study group is: What would happen if vocational education disappeared from the public secondary school curriculum? Would anyone lose? Who would lose? What would they lose? One short-term consequence of eliminating vocational education from the secondary school would be that many vocational educators would lose their jobs. Another more serious consequence that seems very likely is that many students would drop out of high school because they would find it difficult to relate to a totally academic curriculum. What would happen to these students? Would they be from families who already are most disadvantaged economically, socially, and educationally? What are the long-term consequences for students and for society?

It should be apparent from the efforts of the study group that it did serve to raise consciousness about the purposes vocational education might serve in the secondary school. The efforts provided alternative perspectives of purpose, sometimes in tension. It sensitized us to the need to look for purpose from the broader context of the total school curriculum and the role of the school in our culture. On another dimension it sensitized us to the need to carefully examine purpose as exemplified in present practice but also to consider historical trends leading to the present and the future toward which the present is likely to lead. The study group effort, on reflection, seemed to serve its purpose of making us theory laden.

Purpose of Study

The next chapter describes the method used in doing the field work for the research reported here. The method evolved in detail as the efforts of the study group were drawing to a close. The following series of chapters each centers on a basic theme related to purpose of vocational education in the secondary schools of Minnesota which seemed evident in our data. Each theme is developed and sketched in as much detail as our data and time permitted. They represent the "fresh perspectives" or dimension of purpose of vocational education we were seeking to uncover by examining the current practice of vocational education. No attempt is made to make a clear value judgment that they are good or bad, only that they exist from our observations and analysis. Since this was an exploratory study, each of the themes should be verified and further refined if found significant by further research efforts. The last chapter draws more general implications for further research and for practice of looking across the themes and the method used to raise them for discussion.

CHAPTER II

METHOD OF STUDY

Having decided that it would be useful to explore the purpose of vocational education in the secondary school as manifested by the practice of vocational education, our research team faced the challenge of designing a study which would provide the insight we were seeking. The following paragraphs describe the research method we planned and used: the research problem, question, and approach; data collection; and data analysis.

Research Problem, Question, and Approach

Research problem and question. Although much has been written about the intended purposes of vocational education in the secondary school, we know almost nothing about the purposes which are actually evidenced by the practice of vocational education. What purposes are visable in classroom practice? What do they look like? What are the purposes of vocational education according to those most directly affected by "doing" vocational education every day--vocational education students and teachers? And what are the purposes of vocational education according to those who exert decision-making authority and sway attitudes about vocational education--district superintendents, building principals, district and building vocational education directors, and academic counselors?

Another way to think about this problem is to wonder what the proverbial visiting Martian would say about the purposes of vocational education after visiting a variety of vocational education classrooms for many days and after talking with the "natives." What "native categories" would the Martian identify for describing the purposes of vocational education? Further, would the categories differ according to the specific vocational field such as agriculture, business, home economics, industrial, and marketing education?

The central research question which guided our study was: What purpose (perhaps multiple) is manifest in the practice of vocational education in the secondary school?

Research approach. We decided that the most appropriate approach to answering the research question was a naturalistic inquiry approach which is characterized by relatively little manipulation of the stimuli/conditions to be studied and relatively few constraints imposed on the possible responses/outputs of those involved in the inquiry (Guba & Lincoln, 1981). Naturalistic inquiry seemed useful to help us develop the understanding of

> actualities, social realities, and human perceptions that exist untainted by the obtrusiveness of formal measurement or preconceived questions. It is a process geared to the uncovering of many idiosyncratic but nonetheless important

> stories told by real people, about real events, in real and natural ways. The more general the provocation, the more these stories will reflect what respondents view as the salient issues, the meaningful evidence, and the appropriate inferences. . . . naturalistic inquiry attempts to present "slice-of-life" episodes, documented through natural language and representing as closely as possible how people feel, what they know, how they know it, and what their concerns, beliefs, perceptions, and understandings are. (Wolf & Tymitz, 1977, p. 7)

A naturalistic inquiry approach allowed us to undertake the study of the purpose of vocational education without predetermined conceptions or theories about the purpose of vocational education. Although we couldn't help but have some of these preconceptions, we did not design a study to test certain conceptions. On the one hand, we as researchers suffered from over familiarity with vocational education; we could never possess the pristine mind of the visiting Martian. On the other hand, it had been several years since any of us had spent our daily lives in secondary schools; we lacked a native's view of vocational education. Therefore, we tried to build upon our knowledge of the field (both our theoretical and personal knowledge) and to take as fresh a look as possible at vocational education--specifically what seem to be its outcomes. It should be noted that our knowledge about stated purposes of vocational education did shape some of the questions we asked in interviews. But, as Guba and Lincoln (1981) point out, naturalistic inquiry is always a matter of degree; it is never "pure" in the sense that absolutely no constraints are placed on the stimuli and responses studied.

Data Collection

Sample selection and description. Given the amount of time which we could devote to the project, given the fact that we wanted to complete data collection a month or so before the end of the school year (to avoid picking up what is characteristic of but generally thought to be unique to the end of the year), and given the amount of data we wanted to collect for each classroom, we settled on a sample size of 14 classrooms.

A purposeful sampling method was used in order to increase the usefulness of information obtained from a relatively small sample (Patton, 1980). Purposeful sampling lent itself to our desire to obtain in-depth, detailed information about selected cases of vocational education in secondary schools. We decided that we could learn the most by studying cases which met four criteria: (a) recognition as "good" programs by key vocational education program leaders in the Minnesota Department of Education and by vocational education teacher educators at the University of Minnesota; (b) representative of most of the vocational education areas--agriculture, business, home economics, industrial, and marketing education; (c) representative of programs in urban, suburban, and rural locations; and (d) willingness to cooperate in the study. To increase our efficiency and reduce costs, we also sought to find schools in which we could observe two vocational education programs. That worked out in two of the schools finally included in the sample.

After identifying several vocational education programs which met the first three criteria, we discussed our research project with administrators and teachers associated with each of the programs. Although a couple teachers decided not to participate in the study, generally we received responses of considerable interest and willingness to cooperate.

As shown in Table 1, the 14 classrooms were operating in 8 public schools in and around the metropolitan area of Minneapolis-St. Paul: two schools were in urban districts, two in suburban districts, and four in rural districts. For the sake of both efficiency and depth, we observed two classes of a particular program (e.g., agriculture) in five schools, and we observed double-period classes in four schools. Further, because vocational education in the secondary school is offered in both one- and two-period time schedules, we wanted to include both types in our sample.

The classes focused on a variety of vocational education subjects: computers in agriculture, model office procedures, consumer education, family life education, automotive mechanics, production graphics, occupational food service, marketing and distributive education, agricultural business, agricultural mechanics, and office procedures. The enrollment in these classes ranged from 10 to 31. In two of the classes, a technical assistant/paraprofessional as well as a teacher worked with the class.

Data collection strategies. Data collection occurred between March and May, 1984. The primary methods used to collect data were (a) observation of the classrooms and (b) interviews of people in a variety of roles related to the practice of vocational education at the secondary school level. In addition, we administered two paper-and-pencil instruments to all students in the classrooms observed, and we obtained a variety of materials about each program observed. A fuller description of the types of data collected, the methods used to collect data, and the schedule for data collection follow.

Direct observation was used to obtain descriptions of what was occurring in the classrooms. Each classroom was observed by one and the same researcher during four full periods of each of three weeks, with one- to two-week intervals between observation weeks. (That is, a total of 12 periods of each classroom was observed.) The other three periods were used for other types of data collection.

For the first few minutes of each class period, the researcher recorded notes on the physical environment of the classroom--the space being used, the arrangement of facilities, and the location of students and teacher within that space. If the physical environment hadn't changed since the last record, that was simply noted.

As soon as observations of the environmental context were recorded, the researcher began to record the first segment (the term we used to refer to each observational unit). A segment consisted of 5 minutes--1 minute of observation and 4 minutes of recording what was observed during that minute. This routine was used throughout each class period. Occasionally, events occurred which observers considered worth noting even though they fell at times other than the prescribed observation minute. Our procedure was to record such events and note their timing.

Table 1

Characteristics of Classrooms in the Study

Classroom number	School number	Subject matter of the class	Approximate student enrollment	Grade level	Type of location
1	1	Agriculture (Computers in Agriculture)	13	11-12	Rural
2	1	Agriculture (Exploring Agriculture)	31	9	Rural
3*	2	Business and Office (Model Office)	20	11-12	Rural
4	3	Home Economics (Consumer Education)	10	11-12	Rural
5	3	Home Economics (Family Life)	19	11-12	Rural
6	4	Business and Office (Related Instruction for Those on the Job)	18	12	Suburban
7	4	Business and Office (Office Procedures)	22	11-12	Suburban
8	5	Agriculture (Agricultural Business)	17	10	Rural
9	5	Agriculture (Agricultural Mechanics)	13	11-12	Rural
10*	6	Industrial (Production Graphics)	18	10-12	Urban
11*	7	Industrial (Automotive Mechanics)	24	10-12	Suburan
12	7	Distributive (Beginning Marketing and Distributive)	30	10-11	Suburban
13	7	Distributive (Advanced Marketing and Distributive)	15	12	Suburban
14*	8	Home Economics (Advanced Food Service)	26	11-12	Urban

*These were double-period classes; all others were single-period classes.

Observations were recorded on a separate form for each 5-minute segment. Some researchers recorded their observations directly on this form; others wrote in notebooks and later filled out the observation sheets. In one column of the form, we wrote descriptive comments about what was occurring in the classroom. In the second column--at the time of observation or later--we noted inferences or questions about the content of our descriptions. A copy of the form is found in Appendix A; a sample of a completed form is included in Appendix B.

At the initial stages of designing our study, we thought we would use both unstructured and structured observation forms. Our interest in using a structured form came from a desire to have quantifiable data which could be used to describe and compare vocational classrooms on several dimensions (e.g., teaching method, student activity, time on task). However, during the pilot testing of our observation methods, we found that the structured form was not easy to use (perhaps in our eagerness to be comprehensive we included too many dimensions) and contrary to its "objective" appearance required judgments about what categories on the form one ought to check. The pilot test made us realize that we didn't know which predetermined categories would best describe vocational education classrooms. At this phase of "progressive focusing," we decided not to use a structured observation form.

A semi-structured interview was used to obtain the views held by people in different roles about the purpose of vocational education and its relation to the rest of the school. Different, but comparable, interview guides were developed for use with (a) district or building administrators--superintendents, assistant superintendents, or principals; (b) academic counselors; (c) vocational education directors; (d) vocational education teachers; and (e) vocational education students. Copies of the interview guides are in Appendix C.

A total of 3 superintendents, 2 assistant superintendents, 6 principals, 9 counselors, 5 vocational education directors, 1 assistant vocational education director, 9 vocational education teachers, and 54 vocational education students were interviewed. In determining the specific people to be interviewed, we considered the superintendents, principals, vocational education directors, and teachers as "givens." In cases where a school had only one counselor, he or she also was a given. In the schools with more than one counselor, the vocational education teachers who were participating in the study identified particular counselors for us to interview. The students we interviewed were selected by a maximum variation sampling plan (Patton, 1980). For each classroom we observed, we asked the teacher to identify three students who benefitted differently from being in the class--one who had benefitted a great deal, one who had benefitted a moderate amount, and one who had benefitted very little. We settled on this plan for sampling students so that we could talk with students who presumably were having different experiences in the class, and, therefore, might express varying views about the purpose of vocational education.

All of the interviews were tape recorded. For the most part, they took place during the second and third observation weeks. In a few instances, interviews with administrators took place after the third observation week.

The Career Development Inventory (CDI) (Super, Thompson, Lindeman, Jordaan, & Myers, 1979) was administered to all the students in the classrooms observed.

This instrument has been developed to assess career development and vocational or career maturity. The CDI has two forms--a school form for use in grades 8 through 12 and a college and university form for use in higher education. The school form was used in this study. The CDI consists of the following eight scales: Career Planning, Career Exploration, Decision-Making, World-of-Work Information, Knowledge of Preferred Occupational Group, Career Development--Attitudes, Career Development--Knowledge and Skills, and Career Orientation Total. We administered the CDI during one of the class periods of the third observation week. Generally, in the one-period classes, students completed only part of the CDI; in the two-period classes, they had enough time to complete the whole instrument.

A Student Survey was developed by us to gather demographic information about the students in the classrooms. This survey asked students to provide information about themselves, such as their age, the courses in which they were enrolled at the time, their reasons for taking vocational education courses, their grades in vocational education courses as well as overall, and their career plans. A copy of the Student Survey is in Appendix D.

A variety of other materials was also collected for each classroom: a map of the school; a school calendar for the year; the student registration booklet which lists all the course offerings in the school, including all the vocational education course offerings; a curriculum plan or outline for each class observed; and copies of handouts, worksheets, tests, and other materials used in the classes we observed. Each observer prepared a fairly detailed map of the learning space used by students in the observed classrooms.

We also kept notes on our conversations with teachers and others in the school when those conversations dealt with what was going on in the vocational education classroom and the school. Each of us wrote a narrative description of the school's setting (i.e., where the school is located in relation to the town or city, the "feel" of the campus, the appearance of the neighborhood, and similar qualities). To supplement these written descriptions, we took photos of the school exterior and of the classroom interior when students were not present. Lastly, we each agreed to try to keep a journal in which we were to reflect on our experience as researchers in this study--insights, doubts, surprises, conflicts, and so on.

Training for data collection. We used several activities to prepare ourselves for data collection. Five of us were involved from the beginning in the conception of the study and in the selection and development of data collection methods. Frequent meetings were held to clarify what information we wanted to obtain and to refine our methods.

Once we settled on the methods we were going to use, we "trained" ourselves to use them. Pat Copa, who has studied and used ethnographic methods extensively, organized and conducted training for us to develop our observation and interviewing skills. We read about and discussed the methods of observing and interviewing, we used videotapes of vocational education classrooms and live vocational education classrooms to practice observing, and we asked some vocational educators to participate in practice interviews.

To assure as much consistency as possible in our data collection efforts, we prepared a "field guide notebook" which included details and instructions about all of the data collection procedures. Each of us had a copy of the notebook. During the actual data collection period, we met occasionally to discuss our progress.

Data Analysis

In observation and interview studies, there is not an exact point at which data collection ends and analysis begins (Patton, 1980). As each of us was observing and interviewing, it was both inevitable and desirable that we had analytical insights about the purpose of vocational education, including the ways in which equity was being practiced. These initial insights were noted and came into play later in our analysis. The first step in our data analysis was the organization of the data.

Organization of the data. We actually began organizing our data when we began the data collection. Codes were used on all of our materials to designate the school, classroom, and so on. The observation records and student surveys were typed and the interviews were transcribed as we went along. The data were entered onto computer disks and then were checked for accuracy and completeness. Copies of all the data were made for those of us who would be involved in the data analysis.

At this point in our work, a couple changes occurred in the membership of our research team. Pat Copa, who had been employed to be involved only through the data collection phase, officially left our team. Marsha Rehm, who had experience analyzing narrative data, was employed to help with data analysis.

Also at about this time, George Copa read an article by Eisner, "Can Educational Research Inform Educational Practice?" (Eisner, 1984). In this article, Eisner argues that educational researchers, if they are to increase the relevance of educational research to educational practice, ought to "have an intimate acquaintance with life in classrooms" (p. 450). We believed that we had gained this intimacy, but we felt inadequate when it came to Eisner's major thesis: to capture nuance of educational practice and develop theories which will be useful to practitioners, we must develop a language capable of conveying such nuance. Eisner describes this language as the language of criticism.

> By a language of criticism, I mean a language rooted in the humanities. This is a language that does not shrink from metaphor, that does not mute the voice of the writer, that recognizes that form is an inescapable part of meaning. By a language of criticism, I mean a language perceptive to what is subtle, yet significant, in classrooms and schools--a language that uses the artistic, when it must, to render the subtleties of classrooms vivid to the less discerning. When well crafted, such a language provides insight and the kind of guidance that the emotionally drained language of propositions cannot provide. A language of criticism will not provide prescriptions, but it can illuminate precisely those aspects of classroom life that propositional discourse cannot

> locate. It enables the teacher to see and therefore to have a basis on which his or her intelligence can operate. (p. 452)

Marsha Rehm's first task was to explore the language of the humanities for concepts to help us develop a framework for analyzing and describing what goes on in vocational education classrooms. This framework was used in analyzing the content of our data.

Content analysis. Since we were most interested in what the classroom observations, interviews, and student surveys communicated about the purpose of vocational education in the secondary school, we used the research technique of content analysis to objectively, systematically, and quantitatively describe the manifest content of these communications (Berelson, 1954). The unit of analysis which we used was the theme. We sought to identify the major themes about the purpose of vocational education which were expressed through both the behaviors and words of the students, teachers, counselors, and administrators.

To identify these themes, we each read all the observations, interviews, and student surveys from each site. After independently identifying themes for a site, we met to compare and discuss our lists. This process involved discussing the meanings of themes and the content upon which each was based. These discussions were far from neutral and harmonious. Each of us brought to this phase of data analysis our particular perspectives and biases about vocational education. Also, the person who collected the data on a particular site probably felt especially insightful about the themes which best characterized that vocational education program even when the other project members didn't share that characterization. Since five of us were involved in this analysis, we were able to check one another, to bring us back to our data, and to increase the objectivity of our analysis. Having several people with different backgrounds and perspectives involved also increased the likelihood that we would capture a number and variety of themes. The process of each of us reading all the materials from a site, identifying themes for it, and then meeting to discuss our ideas was used for each site.

After identifying themes for each site, we considered whether or not there were commonalities in themes across sites. The question was: Are the vocational education classrooms we observed unique in their purposes, or do some purposes function across the classrooms? Our judgment was that there definitely were common purposes evident in classrooms regardless of their location or subject matter.

The next step became that of identifying and clarifying the meanings of the themes which ran throughout the data. This was done with an iterative process of rereading data, redrafting the list of themes, and refining the meaning of themes.

Once the major themes were agreed upon, we worked to establish reliability in the coding of data relating to each of the themes. We were concerned about consistency among analysts. To develop consistency--that is, that different coders would produce the same results when they applied the same set of themes to the same content--we went through a series of codings and clarification of

themes until the three analysts achieved a correlation of reliability equaling .74 and .76 on two different samples of data. After about half of the data were coded, the three analysts selected another two samples of data and checked consistency among their codings. The reliability scores on these samples were .71 and .79. Considering the fact that the 3 analysts were coding for 15 themes, we decided that we could feel fairly confident in our themes and coding procedures.

Interpretation of data. After all the data were coded, printouts were obtained for each theme and the interpretation of the data was undertaken. By reading the material for each theme over and over again, we developed for each theme a conceptual framework that guided our description and interpretation of that theme. Except for the theme on equity, each theme was developed by a single person. During this time of writing, we met weekly to discuss our interpretations. The remainder of this publication is a presentation of our themes--the purposes manifest in the practice of vocational education in the secondary school.

CHAPTER III

BUILDING COMPETENCE*

This chapter focuses on the feelings of competence students experienced in the vocational education classes in our study. After analyzing the data we were able to identify three types of competence experienced by the students. The first, skill competence, refers to competence which results from learning technical and interpersonal skills. Skill competence is generally derived from skills and indicated by results which are relatively easily measured and observed. This measurement and observation can, theoretically, occur without great consideration of the person or context. The ability of a student to weld two pieces of metal, apply ink to paper, or sell a product are examples of skill competence.

A second type of confidence labeled personal competence concerns students' self-esteem. Rather than students' confidence in themselves, this sense of competence refers to the notion that students like or accept themselves. Unlike skill competence, personal competence includes items not easily measured or observed. We also noticed from our data that students were not as likely to express this type of competence. However, adults were aware of personal competence as an intended purpose of vocational education and encouraged its development.

Contextual competence, the third type of competence, involves an interaction of skill and personal competence. Contextual competence is the competence resulting from students becoming aware of their own abilities and how these abilities relate to the needs of society around them.

I Can Do It--Skill Competence

Skill competence is when students become competent in technical or interpersonal skills. Competence in these areas give students the feeling that "they could do it." We saw evidence of both interpersonal and technical skills being developed in vocational education classes even though technical skills were more prevalent than interpersonal skills. Whereas technical skills referred primarily to students' manipulation of objects, machines, and processes, interpersonal skills were the skills developed by students to assist them in their relationships with adults and other students now and in the future.

Teachers talked about technical skill development and its application to other areas of the student's life. However, they were also concerned with the interactions among their "family" of students. In the agriculture program and, to an extent, in the business and marketing programs, vocational youth organizations provided a way for students to become involved. Student organizations provided a structured system to develop these interpersonal skills. Students

*Theme author was Steve Scholl.

developed leadership abilities and a "family" identification as a result of belonging to an organization. Even though a youth organization did not exist for the printing class, the teacher often mentioned how well the students in his class got along and how this helped the students work as a unit. He explained how he encouraged this "togetherness" by having the students in the class over to his house to swim in his pool and by providing doughnuts and orange juice for them on selected Friday mornings.

In an auto mechanics class the teacher also encouraged interpersonal skills. He stated, "I keep stressing this interpersonal stuff--a nice fun environment." In his words, "Yeah, I suppose the instructor kind of defines the program."

The teachers' intention to develop interpersonal skills became apparent to the students. Some students had experiences in class and in youth organization activities where they learned to interact with other people and were confident of their ability to do so.

> Like getting to know people, like in school here I get to know more people and stuff like that, and it makes me feel more comfortable when I go meet people.

> Well, I've met a lot of people through FFA, and I've learned lots of stuff. . . . Now I'm confident.

This self-confidence in interpersonal relationships was also noticed by teachers. The food service teacher commented,

> I see them in serving and they have a leadership role . . . some of our kids have developed that leadership role in the food service class. . . . the old students help the new students and remind them how to turn the mixers on and that kind of thing and will take a leadership role, because one teacher can't serve thirty students at the beginning of class when everything starts up. And I see them giving leadership through this class and then self-confidence.

Students' Perspectives. When we asked students about the purpose of their vocational education class, why they were taking it or how they would benefit from it, they offered answers which emphasized development of skills.

> I will know all I need to know about foods and cooking.

> To give students practice at writing reports, to give them confidence in speaking in public.

> It's improved my typing skills considerably and working on the dictaphone has taught me a lot. Now I do typing from the dictaphone. I send letters and memos for our insurance company.

> I've learned lots of stuff about seeds and plants . . . and small motors. . . . Now I pretty much know it.

As a result of the development of skills, teachers saw students becoming more self-confident. Even though achievement and attention might be frightening, development of skills in vocational education provided enough sustenance for them to face up to that fear. One student described her new ability to speak to a group which resulted from experiences in an agriculture class.

> I may be scared, but I'm not as scared as I used to be. I remember in seventh grade I had to get up and read from Reader's Digest, a story about a car. I read it so fast and hurriedly cuz I was so scared. I didn't know it, and people kind of laughed and said, "Look at her," you know. And now I'm in a speech unit in English and now I can just stand up there and read it and it's no problem, and I really like that.

Similar feelings were also described by students in other classes, such as the student in the production printing class.

> At first it's presses, and I thought no way am I ever going to run that and I kind of put it as a goal to myself to learn how to run this thing and to run something off myself. And when I did it I was real happy with myself. The first time I ran something off I just thought, Wow!

Teachers, principals, and counselors also noticed the increase of students' self-confidence which resulted from a feeling of technical competence.

> Andy (a vocational teacher) sent (some of) his (students) to a toastmaster's group. You should see some of these timid little souls who are taking the course . . . all of a sudden they're up and banging newspapers on desks and giving speeches. They're feeling good and walking tall.
>
> So I've had a lot of students say, "Oh that's kept me in school," or "I've enjoyed it so much and want to stay with it." And that's kind of nice too, because then I think not only do they stay in school, they do well in class, and they find themselves doing well in their other classes.

In the production printing class where it was crucial that students master the skills of the offset printing process and produce timely results, there were numerous examples of competence developing. When a student was given complete responsibility for a $25,000 duplicator, or allowed to administrate the business and clerical activities of the sale of graduation announcements and other related cards and invitations, self-confidence developed. For example, a student responsible for the duplicator said that there was no need for his instructor to check his adjustments and maintenance of the machine because he knew how to do it.

Adults' perspectives. It often came through in our discussions with the adults that students were intentionally being encouraged in their development of

technical skills which would result in self-confidence. The following examples make that point:

> A business and office teacher wanted the students to learn "something that's worth something to somebody" so that "the kids get a little more confidence."
>
> The food service teacher said that "exposure to specific skills" and the practice of those skills, which teach them their "competencies" and "what they're good at" was the purpose of vocational education in the secondary school.

As a result of the feedback that we observed students receiving, encouragement was provided for developing skills leading to self-confidence. Here are examples from our field notes of how the feedback students received regarding technical skills affected self-confidence:

> Ten students, a teacher, and an aide in dining area. Teacher had just talked with female about the dream whip. Told her it would have been thicker had she beat it first like the directions indicated. Teacher sitting across from female now in booth. Teacher gets up and sort of whispers to female, "It was good." Teacher goes to dishwashing area, "Well, guys, this was fun."
>
> Teacher is helping the students on 1250 (printing press). He leans against the wall with his hands in his pockets and asks them questions, seemingly understanding what the problem is, but wanting them to figure it out. He then puts his hands on the machine and begins to make adjustments. He then stands back and tells them to start the press up again. They do. Everything seems to be working fine. He takes one student and slaps him on the back real hard, congratulating him on doing a job well done.

What feeds skill competence? Building upon their interpersonal and technical skills, students developed their feelings of competence by taking on responsibility and achieving. The example of the student in the printing class who, by himself, was in charge of the graduation announcements or the student who took charge of the $25,000 duplicator indicated how students developed their technical and interpersonal skills by accepting responsibility. In the case of the student who administrated the graduation announcement business, the student had volunteered, while the student responsible for the duplicator had been asked to do so by the instructor. In each case, however, the students had to develop a sense of responsibility and work hard to maintain it.

Similar examples were apparent in the other classrooms we observed. In auto mechanics the only girl in the class was the shop "foreman." Appointed by the teacher on the basis of her interpersonal and technical skills, she often

received tasks requiring her to get boys a foot taller and one hundred pounds heavier to follow her direction. Her attempts at achieving this goal and sometimes being successful attests to her competence and the self-confidence she displayed in the class.

The concept of responsibility was described by the vocational education teachers. Besides wanting his students to be productive, the printing teacher also perceived development of responsibility as an objective. He sequenced a student's assignments keeping in mind the student's technical and interpersonal competence. Only when a student demonstrated competence on a particular assignment could that student qualify for one which was more complex.

One teacher was aware of the attainment of responsibility through class or youth organization activities. Referring to the students who arranged their district banquet, planned the meal, set it up, and prepared the meal, he said, "Those who worked on the banquet learned something--learned to be responsible." By taking on responsibility, students had the opportunity to achieve. Through FFA (Future Farmers of America), OEA (Office Education Association), and DECA (Distributive Education Clubs of America) students had the opportunity to enter contests and elections. There were district, state, and national contests and elections.

Another example of developing skill competence in a classroom occurred in the printing class. Four students were attempting to print four thousand sheets of three colors of NCR (no carbon required) paper without the teacher's assistance. Because the final product was to be glued in triplicate, a mistake on any one sheet would mean sheets of two other colors would need to be discarded. After over an hour of set-ups and adjustments, four students had the stack of paper running through the duplicator. When they had finished the stack without a malfunction, there was elation and pride in their achievement.

I Feel Good About Myself--Personal Competence

Personal competence, the second category of competence we identified included those examples of competence which helped students feel good about themselves and resulted in positive self-esteem. The extent to which students accept or like themselves or the degree to which they feel that they are responsible all contribute to personal competence.

Intent. There were many examples in the data indicating that personal competence was an intended part of vocational education in the school's curriculum. Because teachers seemed more able to verbalize such feelings than students, and were more closely involved with classes than administrators, they provided most of our evidence. When asked why he taught what he did in auto mechanics, the teacher replied,

> So that they can do it in this class and feel good about it. It gives them some personal reward . . . . They have a personal, immediate need . . . . Their goal is to feel good about themselves and fix the car and all those little short-term things.

When asked to describe the most important part of his job, he explained,

> Helping students develop a positive self-image and self-confidence and providing an adult role model that is "healthy."

As to the purpose of secondary vocational education, he said,

> Vocational education is an opportunity for all students to experience a variety of challenges, technical challenges, tangible challenges, from which they can have a feeling of success. Many little challenges through this string of successes can help develop their self-image.

The role of the teacher to foster personal competence, was shared by other instructors. A distributive education teacher provided this account:

> They do have something to contribute. The idea is to bring that out. Because a lot of people have poor self-image. And I think part of the idea of the voc ed programs . . . a lot of kids in the lower end of the class rank, is to include the idea of self-image and self-worth. Show that they have importance and show that they have something to contribute. Because there are lots of kids academically on the scale that don't have anything knowledge-wise like that to contribute, and to show the value of what they have. Because everybody has to find their niche. A lot of kids don't perform well in school because they don't see any value in themselves.

This same teacher seemed to be very aware of the need for students to develop their sense of personal competence, as is indicated in this statement:

> To many teachers, what's the main gripe from students here about teachers is they never let "me" say anything. They sit in class and lecture for a whole hour every day and I never get to say anything. I remember when I was in school and I know from my kid, kids are just dying to say something and if you let them say it . . . it develops them. I mean it does something for them. It gives them a sense of worth and contribution. Sometimes it might not be right on key. But it's important for them. We can always get back to the subject. It's important for that person at that point in time.

Students did not readily perceive the intention on the part of teachers to develop personal competence. They didn't indicate that they were in a class because they wanted to feel better about themselves. Rather, they just wanted to fix their car, or learn to farm better, or get a job. But in some cases there was an indication of some awareness of personal competence that was generally in this form: "I personally just wanted a job to prove I can accomplish something." We can infer that accomplishing something is the students' ways of feeling better about themselves--personal competence.

Developing self-esteem. Although students may have been limited in the ability to express feelings of self-esteem, they were able to notice changes within themselves. For an agriculture student, the changes were easily recognized.

> I used to run around, even in school. . . . When I was sad I always pretended to be happy. And I don't think that's right now. If I'm sad, I'll be sad and ag kind of says, "Be yourself." In our school, it's really not the in thing to be in ag and FFA, and I want to help make it the right thing. But it was a major step to take this and go into something and find you like it and not care what anyone else thinks. . . . Yeah, I can be myself.

With this student, we also might assume that her self-esteem has improved, as a result of the vocational education class, so that she is no longer concerned with what others think of "ag." As students urged her to be herself, and feel better about herself, she can be more confident in her decisions. An explicit expression of personal competence came from a student who had competed in a youth organization contest. "I felt that I did real good. I placed seventh out of I don't know how many."

Teachers, counselors, and administrators described results depicting personal competence. Many counselors felt that there needed to be a vocational education program to serve those students "that are definitely not college material," students who are "not academically-oriented." It was thought that vocational education benefited them: "Yes, it makes them feel better about themselves. Accomplishing something."

Principals also noticed personal competence resulting for certain students as a result of vocational education.

> Okay, for some of our kids, those three departments are probably a salvation for them being here. They're probably in some cases, to the kid the most relevant thing he's taken. And we'll have kids that will go to home ec and get involved in a sewing class and hate every other aspect of school. It's something that for some of our kids, it's a way that they can learn. I guess I'm convinced that not all kids can learn by all lecture or all reading. We get a kid who can't read, that doesn't mean he's dumb because he'll learn. So, for some of our kids I think it has a profound effect. And they probably find more success in those courses than they ever would in some of our more "academic areas." So I think that has a tremendous affect on the kids. It has an affect on the kids own self-image.

The distributive education teacher, however, saw vocational education classes potentially increasing self-esteem for all students.

> It gives them an opportunity to develop a respect and pride in what they do and their self-worth and opinion of themselves comes up.

I Know Who I Am, Where I'm Going, And Where I Fit--Contextual Competence

The third type of competence, contextual competence, is students developing the ability to interact effectively with their environment. Students accomplish this by having a sense of awareness of who they are; a feeling of being a part of a group; knowledge of where they are going in life; and a conceptual scheme for organizing the phenomena in their environment. It differs from the former categories because it is dependent on interactions a student can have with the environment. Whereas technical competence includes the skills students developed and while the notion of personal competence focused on students' reflections on their own ability, contextual competence is the application of these other competencies in one's environment--in practice.

Generally knowing what to do. Contextual competence involves students becoming less fearful of facing the future by having an understanding of the structure of their environment and their ability to deal with it. This was clearly communicated by a counselor, summarizing the purpose of vocational education.

> **The whole thing is then that there's a real value in vocational education. . . . I think all of that is a very important part of a secondary program. . . . It does so much to give them a broad perspective to the whole business of our communities, whether it's the nation, the state, the region, whatever.**

To students, this was generally interpreted as an intent "to teach you what to do when you're on your own", "when I leave home", or "because it has enthused and encouraged me" for future endeavors. We can anticipate that many students would have agreed with the student who said,

> **I just think it's one of the most important classes anybody could take. I mean, if I had my way, it would be mandatory. Because it's important to learn about your environment, your surroundings.**

Self-awareness. Besides a feeling of knowing what's "out there", there is also a contextual competence of students becoming aware of and gaining control of their living in a larger society. A counselor thought of vocational education in this sense, stating that,

> **It gives the students opportunities to find out who they are and where they are and where they want to go. What they can and can't do. It gives students experiences that they could get no other way. That can give them some ideas as to what direction they want to go.**

The competence developed through knowing yourself in comparison with others was expressed by a student.

> **I think it's to help you for your own understanding of others and yourself. And you really learn a lot about how to handle**

> different relations and stuff. The purpose is to help you just understand others and yourself.

For most, this self-awareness focused on career exploration.

> But it's helped me to understand myself a lot better and how to handle my emotions and everything. And I think it will help me when in working and my careers and stuff, too. Like what situations I get into, how to handle them.

World of work. Another kind of contextual competence was that which applied to the world of work, being prepared to wor[illegible] Some students considered this type of competence as something to facilitate a job or schooling.

> I just did that for the competition, then I found out that I was really good at it. I didn't know that, so it's helping me in two ways. One, it's going to help me in my present job and the other one is it's going to help me in further schooling.

Others thought of it in more general terms. In most of these responses, reference to a career in business was made.

> To get experience, to get the training that you need to get you ready to go out into the business world, if that's what you choose as your career. It helps a lot, it really does. You grow up a lot.

> To learn my abilities and strengthen skills needed in a business career.

> It gives me the opportunity to learn all the different skills needed in the business world today.

Relationships Among Types of Competence

The most apparent relationship between the types of competence was the relationship between skill and personal competence and contextual competence. Skill and personal competence seemed to develop before contextual competence.

Skill to personal competence. The contribution of skill competence to the development of personal competence was very noticeable in the auto mechanics program. In this class, the teacher's principal objective was not only to teach his students the technical aspects of auto mechanics, but to use their learning to improve their self-esteem. The following quotes are provided by the teacher at different times during the research process:

> One of my primary goals in this class is for them to have the feeling of self-confidence that hopefully will spill over into everything else they do . . . it's good for their self-image, their feeling of self-identity. And of course it's a vocational course so that, hopefully, some of them will learn mechanics.

> I think secondary education is primarily for developing the whole person, not just occupational competencies. . . . Challenging them in a way that not only develops their technical competency but their inter-personal social development.
>
> I try to give them as much practical experience . . . partly to develop a positive self-image, "I can do."

From these examples it is evident that this teacher intentionally used skill competence as a vehicle for enhancing personal competence. A student quoted previously from an agriculture class remarked feeling that "I can be myself," expressing satisfaction with self.

Contributions to contextual competence. The relationship between skill and personal competence and contextual competence was less explicit. There were references to skill competence contributing to one's intended success in the business world.

> To get experience, to get the training that you need to get you ready to go out into the business world. . . . It helps a lot, it really does. You grow up a lot.

A student in an agriculture class who wanted to become a vocational agriculture teacher presented a rationale for a career choice involving contextual competence. The student stated that it was "important to learn about your environment," and "your surroundings," and interactions with and affects on the people in that environment.

One teacher indicated how student's by skill and personal competence could contribute to contextual competence by stating that "if the student has some self-confidence, some belief in himself or herself and knows what is out there," then achievement, and skill competence within the real world would occur. According to a director, students developed a "good image, a self image," and they will become "better workers when they do get out, . . . they can succeed." This director saw students' development of work skills (skill competence) and a good self image (personal competence) as leading to career success (contextual competence).

POSTSCRIPT

> ***I think secondary education is primarily for developing the whole person, not just occupational competencies. . . . Challenging them in a way that not only develops their technical competency but their inter-personal social development. (Teacher)***

CHAPTER IV

APPLYING THE BASICS TO AND FROM*

Application has a variety of meanings. In education, application is often referred to as putting something to use. Bloom, Engelhart, Furst, Hill, & Krathwahl (1956) address application in their third level of educational objectives involving the use of abstractions in particular and concrete situations. The term, abstractions, is used to refer to "general ideas, rules of procedures, or generalized methods" (p. 205). Application, then, is the use of abstractions in concrete situations. Bloom et al. (1956) seem to use application as a bridge, spanning the distance from knowledge and comprehension to the higher order objectives of analysis and synthesis. In vocational education, it appears that application provides the bridge from students' knowing to students' doing. Although the journey between knowing and doing could be made without the help of the bridge of application, it is an important aspect. Because secondary students are of an age and developmental level when skills in application are developing, they need and can benefit greatly from experiences where application can assist them in making use of what they know. Activities high in practical utility for students' lives serve as the bridge from their knowing to doing, and enhance their ability to use knowledge, not just for their school activities but in thinking about their future.

Application as a bridge can be thought of in different ways. Most important is the way in which application is perceived by the principal characters. In this case, the characters, students and school adults, have distinctly different perceptions of application. A second way of thinking about application as it exists in vocational education is the relationship between theory and practice. Consistent with the definition of application as stated by Bloom et al. (1956), application in vocational education generally involves the use of abstract knowledge to solve a problem, complete an activity or consider one's future. A third way of thinking about application is the form it takes in the class. What does it look like? How is application incorporated into the curriculum? Another way of thinking about the application process is to focus on the method by which students are induced to participate in the application process. Students seem to have a need for something to get them onto the bridge. Often, with sheep a shepherd must use a hook to get the sheep started across a bridge. Although sheep may have difficulty crossing a rapid and deep body of water, they are not accustomed to using a bridge. Students also require such a hook, which often takes the form of an activity having a high degree of personal relevance.

Different Views of Application

There is the story of the group of blindfolded men touching different parts of an elephant and offering different descriptions of what they thought they felt. So it was in the case of the perceptions of students and their teachers--they

*Theme author was Steve Scholl.

had differing ideas about application in vocational education classes. Students generally remarked that they did not think knowledge from their other classes was being used extensively in vocational education or vice versa. Teachers made statements indicating just the opposite. Students and teachers differed in their thinking about application on three dimensions: levels of abstraction, when the application would be useful, and the purpose of the application process.

Levels of abstraction. When describing their perceptions of the application process, students typically offered examples which were noticeably more concrete than those of adults. Generally, students' examples of application involved the use of explicit skills learned in one class being used to do assignments in another. The use of the skill of typing was an especially prevalent example. Many students from business and office education classes remarked that because they could type, they were able to do their reports more easily and the final product would look more polished than without typing skills. One student explained that because of typing skills and some spare time, "last year I made $60 during term paper time." Students also realized that other skills, such as the use of certain tools or machines were useful outside of a particular class. Having developed some mechanical skills in an auto mechanics class, one student remarked that, "In woods (woodworking class) one of the machines broke down and I fixed it." Students also commented that they learned to use calculators, rulers, and other tools and machines and after learning to use them in one class, they became useable in other vocational education classes.

Typically, students were not able to abstractly make the connection between what they were learning and how it might be applied beyond that learning experience. Such was the comment of a student who described the relationship between a math class and an office occupations class.

> **Student:** It is a . . . class so the math that we do in this class is harder than the math that we do (in office occupations), but it's not the same kind of math so it doesn't help me in that. It's different than what we're doing.
> **Interviewer:** It doesn't give you a place to use it?
> **Student:** No. Well it might, someday.

A graphic arts student said, "English is learning about English and the only thing graphic in English is looking at a book." This same situation was made clear by a distributive education student who, after analyzing all of his classes, commented on the lack of application he perceived.

> **Interviewer:** Do you see what you've learned in other courses as being useful in this class?
> **Student:** I don't really think so. They're all kind of different. They're not really interrelated. There's chemistry which has nothing to do with marketing. Math, though, might because I'm pretty good at numbers and everything.
> **Interviewer:** You use those?

Student: Band, really not much. History, kind of because we learn how business was back in the 30's and everything. That's where we are right now in history.

Interviewer: Do you find that you key into the business part of history a little bit more because of this or something?

Student: Well, kind of. I think unconsciously.

Interviewer: Have you been able to use your math quite a bit in this class?

Student: Not really much.

The responses of school adults were often the opposite. An example of this adult perception was that of an agriculture teacher.

> To learn an ag technology skill or theory or principle that you can keep forever and use it when you need it, I think is more important than being able to memorize forty-seven herbicides you can use on soybeans. To know that the herbicides are there and to know how to select and properly use them is a skill and that is what I think they should learn.

In his statement the teacher emphasized the importance of abstract theory or principle, while placing it in a long-range time frame, over the ability to memorize concrete, specific facts.

Thus, while students often perceived application as using specific skills or tools, the perspectives of adults were significantly more abstract, involving higher order thinking skills such as ideas, concepts, and problem solving strategies. The students' examples also had more of a physical quality as compared with the more cognitive aspects in adults' statements. Above all, there was consensus among adults that application does exist and that it is an intended part of education, as stated by a school district administrator,

> To a certain extent, I think, the reading, math, writing, those things would be similar because vocational classes attempt, to some degree, to get kids to do those things. To do some research kinds of projects, library work, some problem . . . and I think those are some of the common grounds for all subjects. . . . Well, I think certainly the math skills, I guess, are the thing we hear more about in terms of students coming or not coming with certain skills. In terms of reading . . . certainly the reading and following directions is part of almost every vocational class.

Later, this administrator added the following comment:

> Well, I think, almost every program probably has as its goal to get young people to begin to assume some responsibilities for themselves.

One teacher saw challenge could be combined with problem solving to provide for an application experience.

> If I know that they haven't been exposed to a particular problem that they're having, then I'll go back with them and work with them and explain to them what I'm doing to make it work. But if I feel that they have enough knowledge, had been shown enough, and had enough time to solve the problem themselves, then I'll let them do it themselves. I'll let them wade through it themselves.

Several other abstract elements were part of adults' statements about application. Included among them were these topics and responses:

o self-concept:

> Yes. Their ability to read and to write is applied in this class. Those students that can't read and write, I'm not going to be able to help much. Because a few of my students come in at, like a third grade reading level. I give up on that, obviously. I compensate. I bail them out some other way. Well, I put the focus on hands-on activities, then, because I don't want to further shatter their self-concept by having them flunk out of auto mechanics just because they can't read.

o concepts, ideas for writing:

> I guess I can't say I've seen examples of it but I would certainly--I would almost have to assume that that would happen. That would be difficult for me to comprehend not being able to take some of these things into other areas. Whenever you're dealing with some of the products and stuff like that and you take them back into, even in your literature classes and your writing labs and stuff like that, you're going to probably write about some of the things that you did.

o exploration:

> So it's getting a taste of that area that you can see already.

o motivation:

> . . . it teaches the basic skills or reinforces the basic skills and gives them motivation for their other classes.
>
> I would think that if it was doing its job it would make those jobs more--they would be more motivated.

o knowledge:

> Then I try to, kind of, build and expand on what they've done there and use that for teaching them additional skills or some additional knowledge that they can use.

o decision-making:

> I try to give them more decision making skills, looking at the options . . . they get a lot of the theories.

o work ethic, responsibility:

> Probably the most important single purpose of a vocational program to me is teaching the work ethic, teaching students so that they know what their responsibility is as employees.

Temporal differences. Students and adults also differed in their perceptions of application along a dimension of time. Students thought of application in the present tense, with short-term implications, while the perceptions of teachers and other adults referred to a process in which knowledge from past experiences would be used in the future. Typically, students might have viewed application as a one-time occurrence, and adults conceived of application as a continual, on-going process.

When students talked about application they offered examples in which current or recently acquired knowledge was used in presently occurring activity, such as the use of:

o math in food measurement;

o general science in recipe ingredients for a recipe;

o chemistry in internal combustion engines;

o accounting in office recordkeeping;

o consumer education experiences in studying advertising in psychology; and

o general grammar in writing reports.

A limited number of students were able to acknowledge the application of past experiences to the present or future, but not to the same extent as adults. Here is a typical example from a graphic arts student:

> Back in junior high we learned a lot about light . . . and I moved right into camera the first time I was here (in graphics class). I just kept on learning about the different lights and the colors and stuff. . . . If I hadn't had science, it would probably have been harder.

In other examples, students demonstrated that they were cognizant of past experiences having utility in their present lives. Regarding the future, the

idea that present vocational education experiences could be applied in occupations was the predominant example. This statement of a student in an office procedures class was representative of this perception of application:

> And on my resume I can put down all these machines that I've learned in here and it looks pretty good on a resume, all these machines, so that's really helped me and if I didn't do that, I probably, if I didn't take this class, I couldn't have done that. I wouldn't have such a good chance of getting a job.

While students had this limited future perspective, teachers and other adults were able to demonstrate a perspective which was much more integrative, incorporating past, present, and future experiences into a comprehensive perspective of application. This was the nature of the statement of a home economics teacher. Identifying the relationship with past experiences she described her consumer education class as one in which,

> We kind of take and build on what they got in ninth grade civics, what maybe they've learned in business math and maybe what they've learned in an accounting class or something like that. Because a lot of my students take those kinds of courses. Then I try to kind of build and expand on what they've done there and use that as a basis for teaching them additional skills or some additional knowledge that they can use.

This teacher then indicated how learning was to be applied in the students' futures.

> Probably the most important single purpose of a vocational program to me is teaching the work ethic, teaching students so that they know what their responsibility is as employees, and going along with that, maybe a little about economics. The idea is that business and employees don't have to be enemies. That, if this country is going to survive its economic problems, we had better start working together. Those kinds of things. Also, teaching them some reasoning skills because they are going to be changing jobs so often, it appears that the specific job skill isn't as important as the work ethic, the reasoning skills--the ability to think, and the ability to learn. The ability to learn on their own. I think my dad is a good example of that. He started as a welder, changed to an electrician, had to go to night school to do that, was an electrician for twenty some years, then went into electronics, learned by reading, by taking some courses. I think that is an excellent example of how training for one job isn't enough.

However, some teachers are very aware of the thinking processes of high school students and understand the benefits of having application used in the more immediate sense as well.

> It's kind of hard to isolate learning and say well, we're going to get this lesson and then if the student doesn't see the value of it . . . kids see it right away, they can't work on long term goals. It would be nice if we all did. But even some of us won't work on a long term goal. . . . They see the effects, they see the cake made, they see the person eat what they have prepared and they're complimented on it. That's what kids need. And, hopefully, we do that in academics too, but we don't always do that. I think we do it much better in voc ed.

Purpose of application. Students were more concerned than school adults about immediate personal benefits. Students most frequently described application when it was associated with something they had to learn or do, especially when it was associated with developing a skill. The skill could have been one developed in another class that was applied in their vocational education class, or vice versa. However, it seemed that students needed to have a certain skill in order to be aware of the application. Typing was a typical example of a skill used frequently in students' discussions of application. Students in agriculture and industrial education classes applied skills in using computer keyboards.

The students' perceptions of application also focused on preparation for future life situations. There were references to learning how to "shop better," "keep finances" and to "live more efficiently." These expressions were generally less frequent than the present focus which was described by many students.

Students also were, to a limited extent, seeing application as a way to improve interpersonal skills. In one example, students realized, "There's different ways you can handle that person" and "I can discuss more openly in class. . . . It's helping me to talk more freely in class."

In general, however, students' perceptions of the need for application focused on the need to do things that would have immediate personal relevance such as solving problems, writing reports, building, repairing, or record-keeping. Students were more able to talk about application when they received a great deal of satisfaction from doing something or thought that they would in the future. For a student in auto mechanics it was repairing cars, for a student in home economics, it was food preparation. Similar examples were evident with students in agriculture and industrial education. For a student in business and office education, it was the interest and knowledge of employment possibilities which became important in application. For an agriculture student, it was an interest in computers which that student wanted to apply to agriculture.

Adults in the school had a more abstract view of application. In some cases, such as when they referred to bringing "realism" to students lives, there was an indication of satisfying students' subjective concerns. In general, adults' examples of application were associated with providing meaningfulness in the lives of students. One school administrator said this:

> I guess, for example, we can learn some of the theory of science and physics in the earlier years, maybe up to grade 10, somewhere in there. But then there needs to be a way for young people to try out some of those theories, make some mistakes and do it in an educational setting with people that know and care and can help. So that as they move along in their education, whatever they might do in the future, then they'll have both things in their back pocket, a knowledge and a skill that they can apply.

The food service teacher saw application as working through problem solving situations, and summarized this perspective in the following way:

> I think we all have some major objectives in vocational education. . . . Application of math skills, application of reading skills, application of, you know, kids begin to wonder why it's important to learn how to read. Well, then you hand them a recipe and they really realize that, my heavens, I do have to read step one and I have to go in a logical order in order for the product to turn out. So I see vocational programs, well, number one, I see them giving students exposure into areas of work that many of them seem to have an inkling for, or a like, or exploring there as a career choice. But I also see it as an application to the academic courses . . . I mean they hand a paper in, they're marked wrong if it's spelled wrong and those kinds of things, so I see it as a nice, a real realistic application to the academic classes. I mean it's real immediate. They walk from their English class in here and start writing out an answer to a question and then I say, "Well, that's not in sentence form."

From Theory to Practice

Although the process of application was perceived differently by students and school adults, there was consensus among them on its direction. Both students and school adults perceived the direction of application as moving from knowing to doing. There was consensus that vocational education involves a practical application of knowledge. An example included an inner-city student in a food service class remarking on the utility of his home economics class. One could use "math to help one learn the cash register, and English so I can speak better English, pronounce things better and know the meanings of the words that are in there." An agriculture teacher told us this:

> What is unique is that in every class that I teach we try to teach the theory in the lecture, and in the classroom we try to teach the practice and then develop the skill, if there is a skill involved. So when we are learning to judge beef cattle, we learn about it, we read about it, and then we practice on slides, and then we try to go out there and do it for real.

This same teacher described what may be the distinguishing feature of application as it exists in vocational education.

> In other classes it seems as though the theory is offered and then the problems are presented, and you have to solve those problems and hand in that assignment. We like to go one step beyond that I think.

That one step beyond is the "application of what is learned in classes to real life situations" which he described as being "an important aspect of instruction."

It seemed apparent that the relationship between theory and practice had been communicated to the students in his class as one of the students described the application in the class.

> I feel that it's the practical application that's useful. The machinery record file is useful not only to me, but maybe if I make enough of other kinds of programs, I could sell a disk or something like that. And maybe someday down the road somebody else will either have use for it or want to buy it or have their own thoughts about applying computer to something that means business. That's tangible and has a use and it's not just a game or it's not just a plain Jane program.

This student also saw differences between practical application in agriculture and in other subjects.

> Some things we do in English or social (studies), I don't think are practical in the real world.

In an auto mechanics class, it was the intention of the instructor to entice students with the allure of being able to engage in auto mechanics while really developing their self-respect and self-confidence. Although the latter goal was never indicated by the student's comments, we became aware of the achievement of the former goal through statements such as:

> I can fix my car if I'm driving home at night and it breaks.
>
> In woods, one of the machines broke down and I fixed it.

There was a recognition of the relationship between theory and practice on the part of a school board governing one of our sites. Their policy allowed students to receive academic credit for math or science when taking certain vocational education courses.

From our data, vocational education appears to be an area in which there is application of theoretical knowledge to a context which has practical relevance. In this process, application can be in the form of a concrete skill, or an abstract concept, and be useful in the student's life and/or other classes.

What Application Looks Like

Separating application from what is vocational education would be an impossible task. Application is such an integral part of vocational education that it often goes unnoticed as a separate entry. Application is both an integral part of the subject matter and is part of the process used to teach it. It is often so well integrated that it becomes virtually inseparable from other learning experiences.

It's in the curriculum.

o In a home economics class the following instructions were given:

> **Write your long-range goals first, a long time down the road. Then back up five years and write goals for that time. Then write short-range goals for just a few years down the road. Do a little thinking, see what you come up with.**

o In an agriculture class learning to program and use microcomputers, the teacher instructs the students by showing them how to manipulate certain shapes on the screen. He then tells them to work independently at their computers and plot at least five points and a horizontal and vertical line.

o In a food preparation class:

> **Student: How many pounds in a gallon?**
> **Teacher: How many cups in a gallon?**

o A student in a distributive education class, telling how he would describe the class to someone else from his school, said,

> **I would tell them that, well, we learn about how to sell things and about credit policies and how to set up your own store, which part of the store is best for selling. And we also have district and state and national conventions all of which are competitive events where we can . . . try something in general merchandising.**

These examples of learning in vocational education classes are all activities which incorporate application in some form within the curriculum. The home economics education activity involved application because the students must probe deeply into their own personal thoughts, needs, and desires, and use what they have been learning about family growth and development to formulate their long-range goals. The example of the agriculture education class also indicates another way in which application is enmeshed in the curriculum. In this situation, knowledge developed within the class itself is applied as part of the class curriculum. In the distributive education class application of the basics (i.e., communication and grammar skills) is integrated into the class curriculum. Both application of knowledge from other classes and knowledge generated within the vocational class were evident in the example from the distributive education class. Retaining knowledge, merged with the knowledge

from other classes, becomes applied in learning "how to set up your own store" and preparing for competitive events.

Application is an intrinsic part of vocational education subjects and was often explicitly acknowledged by a teacher, as indicated by this comment by an agriculture teacher:

> We had a unit on beef cattle, for instance, and to be able to determine the breeding calendars and then to put down a cash flow on a beef operation, involved some math problems. Some of it was simple addition, subtraction, things like that--a lot of percentages, some fractions. Working with chemicals, we have to get into fractions all the time.

The obvious application of basic mathematical knowledge is very apparent in the above example. Application, also involved applying knowledge of beef cattle to a realistic context. Learning about cash flow and breeding are examples of the practical application of this knowledge. An intrinsic part of vocational education is this process of practical application, the way in which things in peoples' lives become part of the class curriculum.

Application also exists in a similar role in the instructional process. In vocational education a "hands-on" approach is frequently used. It results in a student being forced to use knowledge to achieve something: producing a product, completing a task, or achieving a result. In different vocational education subjects, application may take different forms. In the food preparation class the process of instructing students to prepare food in a commercial establishment involved preparing meals for people within the school. Students actually dished up soup, took orders, portioned out dough, and cleared tables. In auto mechanics, learning the different systems of an automobile involved completing certain instructional units. Each similarly designed unit involved reading and/or watching a media presentation and a hands-on activity. In every subject, a similar situation existed. Learning was structured so that application was the essential ingredient of student activity.

The "Hooks"

Often, students in vocational education classes were hooked by the application process. They become involved in the information provided because it was of interest to them in their lives. This is done in various ways in vocational education classes.

Student organizations. The various vocational youth organizations encourage students to apply knowledge. For example, in Future Farmers of America (FFA) and the Distributive Education Clubs of America (DECA) the students were encouraged to engage in competitive events and develop their leadership abilities. For a student competing in an FFA cattle judging contest or for a DECA student designing a marketing plan, application is easily observed. The students must take knowledge they have gained as a result of experiences in the classroom and organize and apply it to a particular competitive event.

A direct line to the student: Personal interest. Personal interest, as expressed by the question "What can it do for me?" was a common motivation for students. In vocational education there were many examples of the use of personal interest to stimulate an interest in application. In auto mechanics the teacher acknowledged that it was being able to "work on my car." That desire becomes the hook to encourage students to apply knowledge because the student wanted to learn to fix his car. In agriculture, a similar situation existed for students who lived on farms. The teacher may say, "What if I bought an old 40-inch row planter at an auction?"; "How many of you have apple trees on your property?"; or "What was the yield in corn last year on your farm?" The teacher knows that there will be certain students who have similar planters, apple trees, or corn fields who will be very interested in the upcoming learning activity. By fostering personal interest, students are motivated to apply knowledge learned in vocational education classes or other classes in the high school.

I can do it: A feeling of competence. A major developmental task for adolescents is to prove to themselves and others that they can do things, especially things which they could not do a few years previously, or things that others do not regard them as being capable of doing. When students see that they can accomplish this in vocational education, they are also hooked by the application process. When students win a competitive event or an election in a youth organization, finish a project, complete a printing run of 3,000 impressions without the machine jamming, they are experiencing this feeling of competence. It is through the desire to achieve or experiencing the feeling of competence that application can serve as a hook.

I can get paid for doing this: Work possibilities. This motivator is a classic: If you learn to do this you can go out and get a job doing it. Often, as a means to get students to engage in class activities (i.e., to apply knowledge) the argument is made that once the exercise is mastered in the classroom, it will lead to increased employability for that student. According to a vocational director, this is the case for one teacher.

> I know he has employers that he had for year after year . . . I saw three or four companies where he has had two or three kids for years and they know his kids do a good job and they hire them back.

In the printing class the instructor read a job announcement one day. One of the students applied for the printing job and was hired. Once this happened, both he and his partner on the duplicator became much better students.

Just plain fun. One of the easiest ways to get students to engage in activities is for them to have fun. Vocational education teachers encouraged this regularly, and in a variety of ways. In an agriculture class, it involved getting an old tractor started after overhauling the engine. Often, a project itself, such as mechanical work on one's car has a sufficient level of intrinsic reward that application easily occurs.

Fun can also include everyone in class going to breakfast on Friday mornings once a month, or the teacher buying doughnuts and juice for the class.

Whatever it is, when it occurred, it can have tremendous effects in hooking students through application.

On one occasion, an auto mechanics instructor knew his students so well that he could foresee their "itchiness" and boredom at having a long lecture on ignition systems, but also realized the need for immediate application to "seal-in" the lecture knowledge. Therefore, he intentionally modified the "shop" car beforehand, changing the spark plug wires and ignition timing, and causing the battery terminal to have a poor electrical connection. After the lecture he took the students out into the shop to demonstrate the principles included in the lecture. When the car would not start, the students were able to have a great deal of fun as they engaged in a troubleshooting session trying to determine what to do about the shop car. Meanwhile, the teacher was able to achieve the goal of application of the knowledge developed in the preceding lecture.

POSTSCRIPT

> ***Back in junior high we learned a lot about light . . . and I moved right into camera the first time I was here (in graphics class). I just kept on learning about the different lights and the colors and stuff. . . . If I hadn't had science, it would probably have been harder. (Student)***

CHAPTER V

THINKING THROUGH PROBLEMS*

Vocational education has a unique orientation within secondary school programs. Its focus is the practical, i.e., what action needs to be taken to improve real problem situations. Curriculum is directed toward studying the conditions which suggest that action and change are needed, toward identifying and defining the problems toward which attention should be directed, and toward developing the approaches and skills necessary to bring about carefully considered goals. In order to accomplish these tasks, it is necessary to have both an effective process and an adequate body of knowledge. These are the elements of the problem-oriented component of vocational classrooms and the focus of this chapter.

The problems of vocational programs may be simulated (what would happen if. . .) or may be quite "real" (how to construct a window display that attracts new customers or how to form a weld that is strong and durable). Another important quality of these special problems is that they do not come as givens but must be defined through study and may be redefined continually as solutions are developed and considered. Seldom is there but one way to frame or solve a particular problem but certain alternatives are usually more efficient, effective and morally defensible than are others.

The process of dealing with problems, therefore, begins with the identification and definition of these problems. It involves determining desired ends or goals and considering alternative ways to reach them. Consequences are anticipated and sometimes tested--as more desirable means are chosen. Even when a "solution" is reached, it is carefully scrutinized for being the "best course" and is discarded or refined after careful thought.

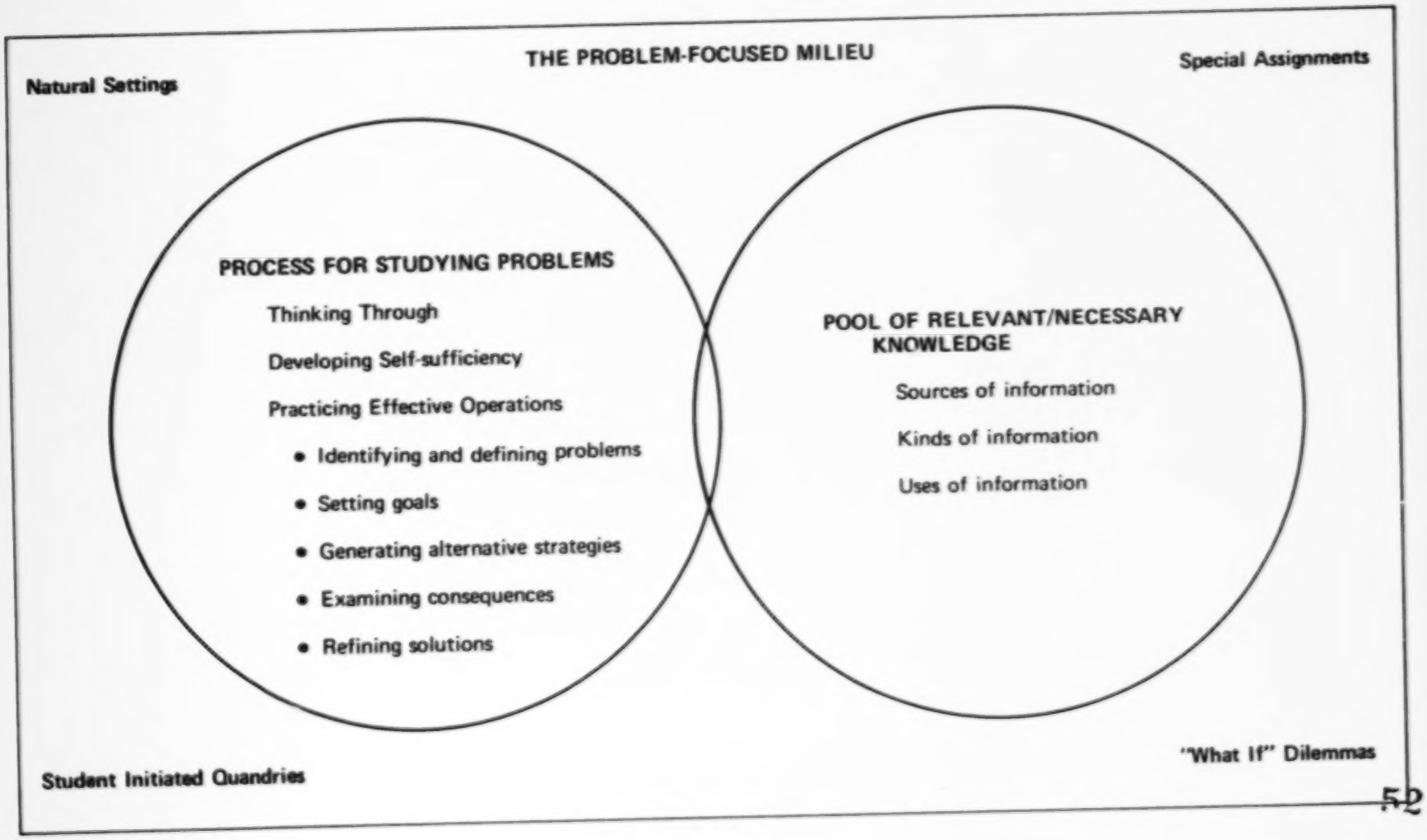
Because the practical is seldom simple and cannot be divided into neatly-defined categories, the knowledge or content found in secondary vocational programs is likely to come from many different sources and be used in different ways. The previous chapter of this monograph specifically dealt with the application of knowledge and skills from other areas, particularly the academic, to problems found in vocational programs. In addition, vocational courses may also draw heavily from interpersonal, moral and ethical, and technical content in analyzing, defining, and resolving the problems with which they deal.

It is this special kind of problem-focused environment found in vocational education programs that is described in this chapter. The unique kind of content, the customized experiences, the specialized questioning, and the dynamic nature of the student/environment interchange are illustrated in the words and actions of the program participants. Table 1 presents a framework which portrays the relationship of the elements of this dynamic process. It also

*Theme author was Patricia Copa.

Table 1

Elements of Problem-Centered Environments
in Vocational Classrooms



provides the reader a guide for proceeding through the sections of the chapter which follows.

Problems: Their Source and Range

The practical problems upon which the vocational programs in this study focused came from a variety of sources. On the other hand, regardless of where these problems fell along a naturally-occurring versus contrived continuum, they were similar in that they all concerned "real life" situations. Specifically, the problems observed in the study did not deal with the abstract; rather, they concentrated upon what students might be expected to encounter in the past, present or future. This had relevance not only for the kinds of problems that were examined, but also for the ways they were approached and the knowledge considered in their resolution.

Problems in a natural setting. Some classrooms were designed to simulate or duplicate conditions found in actual work settings. In the model office, students assumed the roles of corresponding secretaries, clerks, bankers, receptionists, accountants, and managers (among others) who were processing orders, receiving and making payments, keeping records, and communicating with customers. In the print shop, a broad array of actual orders for diverse products was filled by students who had to respond to special requests and time specifications. In the food preparation program, students were expected to prepare and serve the luncheon meal to a portion of the school's population each day at a particular time. In the farm shop, real tractors did not run, real machinery needed repair, and real equipment needed to be designed and constructed.

Problems in these settings arose naturally from the tasks at hand. Sometimes figures did not balance in the model office and the source of their discrepancy had to be traced and located within the various departments. In the print shop, red did not appear on a black background and materials and procedures had to be scrutinized for the right combination to produce the desired effect. In the kitchen, the teacher deliberately modified the kind and level of problems which would be generated by decreasing her level of involvement in the operation: "Now (in the spring of the year) the kids are more responsible for the preparing of the meals and the teacher isn't always there saying how to do it, what to do."

These "real" problems provided natural involvement and momentum to classes that were easily observed and felt. A particular day in the farm shop found a joyful celebration. A tractor which had defied all previous attempts to start its engine finally was running. The engine had been completely taken apart and reassembled. Although a peculiar noise still indicated a potential valve problem, there was no doubt that success had been achieved. The students who had worked on the old Ford gathered around it while the teacher took their picture. Even those who had not been directly involved in the work seemed to share in the satisfaction and pride. The teacher remarked after class, "Days like this make it worth teaching."

The print shop instructor suggested a change in the weight of card stock being used for a print job when a lighter weight caused jams in the operation. He seemed pleased to explain the adjustments he subsequently made on the press

remarking, "I was just hoping you'd have problems!" But teachers in these settings normally did not have to wait long for problems to arise which would provide "teachable moments." Situations within the classroom laboratory continually introduced dilemmas in which decisions about appropriate "next steps" needed to be made. As another pleasant side effect, students seemed convinced of the relevance of what they were doing and commented about how they were more likely to be motivated to persist on their own in overcoming obstacles (without a teacher directly setting requirements).

Special assignments that promoted problems. Vocational teachers in more traditional classroom settings often simulated problem posing situations through specially-designed assignments. Grounded again in the experience of work or home life, these assignments required students to evaluate elements of a situation, propose and assess alternative actions, and make choices based upon explicitly-stated criteria. An agriculture teacher gave his students unfamiliar tools and the mandate to "go and try them out" to determine their function and potential. He provided minimal information and guidance, preferring to raise questions and possibilities, while the students tested, disassembled, and experimented with the devices. Each student was expected to present a quality demonstration on the tool and its uses to the rest of the class.

A home economics teacher assigned groups in one of her classes the task of planning and preparing a meal using a particular set of foods plus one other major food of their choice. Certainly typical of the situation in which modern homemakers often find themselves, the task required creative problem solving.

A marketing teacher used a piece of new computer software to enable his students to simulate the decisions involved in transacting the entire operation of a small food's business. It was necessary to make calculated projections, schedule supplies and employees, and provide for sales and marketing efforts. Student groups were ranked by their success in making sound judgments as assessed by the computer program.

Another home economics teacher used the tool of a life line to involve students in thinking about major decisions--career, marriage, family--in their own lives. They were asked to consider the time and preparation needed to achieve the goals they felt important.

The problem solving task required by these assignments was more defined and teacher-controlled than that found in the natural setting examples described earlier. On the other hand, the process by which the students explored solutions was similar if not the same.

Student-initiated problems. A third source of problems for focus in vocational programs came directly from the students themselves. At times, these were solicited from students in classroom settings while, often, the dilemmas were discussed on a one-to-one basis outside of class. The marketing teacher routinely spent the last part of each of his class periods chatting with students individually or in small groups. This activity, coupled with out-of-class times working with class members on their student organization and sales activities, gave the teacher many insights into their out-of-school interests, activities, and concerns. Many students from his classes worked part-time and

some actually operated small businesses of their own. The experiences encountered in these settings often become the topics of in-class and out-of-class problem solving.

Many, if not most, of the agriculture teacher's students were involved in the Future Farmers of America (FFA), an organization for youth enrolled in agriculture programs. The projects undertaken in students' FFA programs were also used to introduce problems for in-class and out-of-class discussion and activities. Livestock projects, judging contests, and service and recreational efforts focused many "what to do" questions.

The nature of vocational programs, their content and structure, appeared to merge the students' school and nonschool lives to a greater extent than may be true in other program areas in the secondary school. The implications of this phenomenon for learning, for staff development, and for student support are areas which merit more study.

"What if" problems. A final set of problems was found in almost all the classrooms. These were identified as the "what if" problems because they were found in the "what if" questions asked by teachers. These questions asked students to deal with problems that would arise if certain conditions were present.

Teachers asked "what if this were a wall?" (how would the use of the coping saw be affected?) "What happens if you get rain after planting?" "If part of the stem breaks?" "If you have heavy soil that gets too much moisture?" The question was sometimes phrased in slightly different terms: "What happens when a new baby comes into a family?" "If you become pregnant or, boys, if someone close to you did, what questions would you have for a doctor?" "What would you do if you were working in a print shop and the boss tells you he wants a negative right now?"

In classes where teachers often used "what if" questions, students also used this approach in addressing questions to the teacher: "What if you don't know which (plants) are of which kind?" "What if it gets colder after you plant?"

The "what if" scenario capitalizes on the uniquely human ability to imagine a reality that exists outside of the present situation. Piaget described this capacity for imagining what might be, as one of the qualities of his formal operational stage, normally arrived at in the junior-senior high school years. Therefore, in addition to opening new possibilities for relevant problems with which to deal, use of "what if" questions seems to take advantage of and promote the normal developmental and experiential levels of secondary school students. Although vocational programs are not the only settings in which this approach might be used, the concern of vocational education for the practical makes the "what if" course a uniquely-tailored mechanism for identifying appropriate problems for study.

The range of problems in vocational education programs. Examination of the kinds of problems around which instruction was organized in this study revealed much diversity in orientation as well as in substance. Most of the problems were primarily technical in nature and involved how to do particular tasks: compose an image on a computer screen, reconcile accounts and bank statements,

calculate the size of an acre, make printing plates to accomplish specific effects, determine when and how to plant crops. In these cases, goals were either predetermined or considered apparent and the "problem" involved how to design and perfect the best means for reaching these desired ends.

However, other problems tended to include interpersonal considerations and the weighing of values, interests, and problematic ends: what to study in the crops unit, whether to marry and/or keep the baby when faced with an unplanned teen pregnancy, and ways to reduce shoplifting and employee theft. Sometimes, dealing with these areas involved a change in structure from the normal routine. For example, certain days in the model office were devoted to special discussions led by individual students on topics such as professional association and union participation, career advancement, and office relationships. Other times, unplanned situations arose within classes which introduced complex problems--such as when money was discovered missing from the candy sales of the marketing class. Students reported that the interdependent nature of their vocational classes made them much more aware of their own responsibility to the group and concerned about others' functioning and well-being.

Thus, although technical problems dominated the formal part of the curriculum, humanistic, moral, and interpersonal concerns were evident as well. What was less evident, however, was whether the nontechnical problems were studied and considered in as systematic, detailed, and intentional a manner as were those of a technical nature. With the exception of the family-oriented home economics class, which focused particularly upon those areas, the the answer is "probably not."

The Process of Studying Problems

The wide diversity in the kind of problems considered in secondary vocational classrooms and in their settings or contexts suggests that treatment of these different problems might be quite different. Because this situation proved to be the case in this study, the section which follows describes several approaches for defining and dealing with problems within some more general categories of activities which emerged from the many interviews and observations.

Despite the variation in approaching problems that was used in different classrooms and programs, two principles generally dominated the process. Both teachers and students alike emphasized the importance of "thinking through" and "developing self-sufficiency." Other operations were generally perceived as means to reach these larger ends.

Thinking through. A commonly-used phrase, "thinking through," described the purposeful mental activity involved in framing and acting on dilemmas.

> Interviewer: What are the most valuable things you have learned in this class?
> Student: To think through things before you take action.

Teachers, about the nature of the class:

> I try to give them more decision-making skills, looking at

> the options, thinking through things (a home economics teacher).
>
> (The class is challenging) in solving some of different types of printing jobs that have to be done. How to go about doing it. Some of these kids that have the ability to think through a job and you give them a problem and they have to solve it and get it through to the printed sheet (an industrial education teacher).

Students about the nature of the class:

> You're doing more things and you've got to think about it. . .
>
> You've got to think about it and know what you're doing.
>
> You have to think on some of the things to get them done.

Closely related to "thinking through" was "figuring out:" a teacher--"They pay attention best when they're trying to figure it out;" a student--"Minor things going wrong I can pretty much now figure out how to fix them." In addition, participants spoke about developing "decisionmaking," "reasoning," "planning," and "problem solving skills." Frequently, they related these abilities to being able to deal better with situations outside of school and in the future.

> It (the class) relates to what you will do in the future and how to cope with your decision--not a homework class but opinion and thinking which is harder when you apply it to your own life and what it will be like.
>
> I know how everything goes; it's just a matter of different situations.
>
> To help me to make a conscious decision on life, children, marriage. . .
>
> (Purpose of vocational education is) teaching them some reasoning skills because they are going to be changing jobs so often it appears that the specific job skill isn't as important as the work ethic, the reasoning skills, the ability to think, and the ability to learn.

Students and teachers viewed the ability to anticipate as an important element in being able to solve problems, make decisions, or develop plans. "Thinking through" these operations involved being able to mentally test alternatives and consequences before they happened; to be able to make accurate projections without actually having to try everything.

> Student response to what was learned in class: To get you to think about things before you buy them and to know generally what's going on in the world.
>
> A classroom assignment: Make a list of what I should think about before I become sexually involved with another person.

Thus, whether the process described in this chapter was called problem solving or decisionmaking or reasoning or thinking through, it was a very conceptual operation. In certain situations, motor skills were involved, but these were not employed in an automatic, mindless manner. In most, if not all cases, specialized knowledge was needed, but this knowledge was directed toward a particular action-oriented goal. Application of classroom learning outside of class and to the future was present, but no one expected that this application could be done without adapting the skills learned to specialized, new circumstances. Thus, "thinking through" involved many other skills and activities but was unique in the kind of mental effort and process it necessitated.

Developing self-sufficiency. The second essential element in the problem-fucused process was the movement of students toward self-sufficiency and responsibility. Students acknowledged the importance of this end as well as teachers:

> In this class, you learn on your own. It's through your own experience. He'll help you out if you need it, but he likes to let you learn how to do it yourself.
>
> (The class) will make me live my own life, make me decide my own things I want to do and how to work it out. . . . If I do have to be by myself some day and have to work things out for myself, I'll be able to do it.
>
> (The class) helps to stabilize you more emotionally to handle problems on your own.
>
> You're on your own here a lot. . . . It makes you more responsible.
>
> If you know what you are doing, you get something to do and then you are on your own. . . . You do it by yourself and you do the best you can.
>
> They teach you how to work by yourself and how to rely on yourself and the people around you to get your work done.

Teachers said, "My main purpose here is teaching responsibility, independence, initiative" and they outlined the way they went about doing this in much detail. They acknowledged that not all students were equally ready to master all the elements of responsibility and self-sufficiency and that general maturity might be more important in this process than were classroom experiences. In addition, teachers stressed that safety concerns put parameters around what they might otherwise do to encourage independence. The machines and tools in some vocational laboratories required a judicious use of the learning-by-doing approach.

The combination of readiness and careful nurturing of desired qualities was described in this manner by one teacher.

> Most of these kids can't. . . . Let's say half the kids roughly, aren't ready to take on responsibilities where they can go on their own. They're not ready; they're not to that point. . . . As they grow, you try to make them do their own problem solving. . . . I try and go through with them what their problem was and what I'm doing to solve the problem, so that when they run up against that problem they can say, "Hey! This guy did this and he explained to do this."

Another teacher described the way she sequenced assignments and activities across the year to gradually increase the amount of self-direction demanded of students. One of her students corroborated from a pupil's perspective what she had related.

> Well, when we first started out, it's some book work but it has changed where now the kids are more responsible for the preparing of the meals and what have you, and the teacher isn't always there saying how to do it, what to do. It's more or less right now the kids are taking over and they're actually managing the food factory. If you really need help, the teacher's there, but you've got to rely on yourself. You have to know what you're doing.

In addition to a supportive--if somewhat withdrawn--teacher, students had another very important source to draw upon in problem situations: fellow students. Occasionally, the pairing or formation of small groups was teacher organized: "I try to give them a chance to work with a partner who may know as much or less than they do." More often, natural pairs or small clusters of students formed and reformed as tasks dictated, some groupings becoming more stable than others. Following a shifting of assignments in the model office, individuals in new positions went to the persons who had held the jobs previously when difficulties arose. Small groups formed to work on computer programs, printing jobs, window displays, luncheon dishes, and engine repairs. Students sometimes contrasted the interactive experience of vocational classes with other classes they took where they described the atmosphere as more competitive, students being expected to work primarily by themselves. In contrast, in his vocational class a student reported,

> We've got groups. If you're with one of your friends and you get to talk to everybody else, then you don't have as much hassle. You don't have to worry about yourself. You've got somebody else helping you with it. Plus, you're both learning at the same time. It's much easier that way.

Thus, the process-oriented component of the problem focused environment of the vocational classroom involved: 1) active mental processing of situations and information, 2) systematic approaches for identifying and dealing with problems, and 3) experiences designed to foster responsibility and self-sufficiency

within a social setting. The observations and the reports of students and teachers alike of the elements of the process were remarkably similar, with the exception of one teacher who felt students learned just as much if he told them how to do things as if they had to figure it out by themselves.

Problem-focused operations. "Thinking through" and "developing self-sufficiency" guided more technically-oriented activities which served to deal with problems in a systematic, productive manner. To dissect and describe the larger process through these activities is admittedly artificial and misleading; it is certainly a situation where the whole equaled more than the sum of its parts. In addition, although the elements within the larger process will be discussed in a sequence, more typically they occurred in the dynamic, interactive manner in classrooms, each step being refined and reformed in light of the others. With these reservations in mind, we will proceed to describe the operations found within the problem-focused process, claiming that it is sometimes necessary and justified to create divisions when more detailed understanding is desired. These operations included identifying and defining problems, setting goals, generating alternative strategies, examining consequences, and refining and perfecting solutions.

Although several of the problems described in the first part of this chapter were presented to students as dilemmas to solve, students were also asked to find and define problems on their own. The simulated or laboratory environments of most of the classrooms offered an ideal setting for this activity.

> Joy, a model office student, wanted to delete a paragraph from the memory typewriter. She pushed the RETURN key and the machine returned once and then didn't respond. The teacher leaned over her shoulder and observed, "You're at the bottom." Joy said something low and pushed another key; the machine moved to the correct spot. The teacher asked, "Now what do you want to do?" Joy gave an inaudible reply and pushed another key--the deletion was completed. She looked up at her teacher, obviously pleased, "Thank you," she said. As the teacher began to walk away, he remarked, "I didn't help you though. You figured it out yourself."
>
> An older John Deere tractor sat in the farm shop. It had not started since before it was towed into the room at the beginning of the quarter. A student climbed onto the seat and tried to start the engine. There was a low grinding but no ignition. In front of the tractor, a student asked if anyone had checked the spark plugs. On the other side of the engine, another student pointed to a greasy stain beneath the engine and called, "Look! There's an oil leak!"

Why did figures not balance in the input and the outgo of a small distributing business? What could be expected to be the difficulties encountered in teen-age marriages with small children? Why didn't the computer program just completed give the expected cattle rationing information? Some described it as "trouble shooting," most seemed to recognize that problems themselves were not

always simple and apparent. The process of recognizing and defining their nature was important and challenging.

A second part of this problem-framing process concerned whether the resultant dilemma was one with which the group could or should deal. Some problems were beyond the point where treatment was worthwhile, while others were best delegated to someone else. For example, shop students examined a battery to determine if it should be serviced; its level of deterioration coupled with the cost of rejuvenation contributed to the final decision. The print shop teacher asked students what they would do if they were working in a print shop and a customer brought in a job with copy similar to that on which they had been working. Having struggled with inadequate equipment and materials, the students replied that they would "send it out." Agreeing that it "wasn't worth the time," the teacher supported the decision to send it to a specialty shop. He punctuated the lesson with the message, "What you've learned today is on your final exam!"

Defining the nature of problems and deciding whether or not to focus time and energy on them are not incidental elements in what is often called a "problem solving process." Since problems in life do not come pre-packaged with their critical elements clearly identified, the operations of framing and prioritizing are essential to functioning effectively in the "real world." However, even though problems are unlikely to remain static as they continue to be probed and their resolution is undertaken, an initial framing is necessary to provide the focus for beginning action.

By and large, goals were not dealt with in an explicit manner in most of the vocational classrooms that were observed. It appeared that the individuals involved felt the goals were clear and self-evident: a motor that ran, a print job completed correctly and on time, a meal done likewise, a computer program that provided prescribed information. Criteria for successful resolution of the problems described earlier seemed to be developed externally and were conveyed by the teacher. One might speculate that this situation could have been designed to simulate the presence of customers or clients who requested the services of the vocational program--another reflection of the recreated "world of work." On the other hand, there was little or no open discussion of anyone determining the goals or objectives of classroom experiences in the transcripts examined, other than the abstract notion described by teachers and students alike of "thinking though."

It will be noted, however, that goals are implicit in the discussions which follow of alternative means for undertaking problem resolution and in the examination of consequences of various actions. What is less apparent is the development of a particular goal from among others and the conscious selection of means best designed to reach that end.

There was one notable exception to this situation. The Family Living home economics class taught a unit in which goal-setting and decision making were presented as primary content. In one exercise of this unit, students were assigned the tasks of identifying their long-range goals and setting intermediate goals to eventually meet these ends. They were asked to make decisions about the consequences of life choices such as marriage, careers, and education.

Another home economics class did a variation of goal development in formulating a list of basic rights each child held as a human being. More analysis needs to be conducted of explicit goal-setting discussions and exercises (and of related value exploration) in relation to the other topics or experiences which follow.

One of the most noticeable qualities about the strategies considered in responding to problems examined in vocational classrooms is that these strategies were so often found in plural, as opposed to singular, form. Different teachers commented several times that there was more than one way to accomplish what needed to be done and then actively encouraged students to generate and test alternative approaches. They prodded students to broaden the range of their solutions with such requests as: "What else could we do?" "How could you deal with this problem in another way?" "That is one way. How else?" "Any other things you might want to cut down on?"

Nontraditional responses by students were generally not only not discounted but were often received with enthusiasm. A marketing teacher asked his class what might be done about employees who took things from stores because they felt they were "owed" something. A student responded, "Give them employee discounts." The teacher paused, at first appearing somewhat confused. The idea then seemed to register and he said enthusiastically, "Yeah. Give employee discounts. I hadn't thought of that. Good idea! Right off the top of his head!"

Another of the teachers asked how a column of numbers could be added using a computer program. A student replied, "I know. I worked on that all day yesterday." The teacher asked, "How did you do it?" The student described the process he had used. The teacher responded, "That's a neat way of doing it!"

Sometimes students disagreed with teachers about the best course of action. Teachers responded with remarks such as, "OK, you work it out for yourself." "Do what you think will work best." "Up to you how you want to do it." It was possible to observe teachers physically removing themselves from students while they encouraged them to explore their own courses of action.

> The ag shop teacher walked over to a group of students who were working on some angle iron forms. Together they talked about how to get the angles just right. One of the students held a square. The teacher remarked that the only way to make sure the angles were perfect was to use a hacksaw. A student offered another suggestion which was not audible to the fieldworker. The teacher observed, "I suppose that would work too" as he left allowing the student to decide.

Teachers emphasized the importance they felt about students being able to generate ideas for "what to do" and to choose among them. They spoke about the ways they structured the class to provide these experiences for students and the role they themselves attempted to play in the process.

> I see my role here to be very laid back and let them make the choices. These are the advanced students, students who have gone through all the basics. I like to take a secondary role and let them pass or fail on their own. Let them

> see by trying something if it works out, how it works out. Is it satisfactory for their kind of thing? . . . Let them make the choices.

Certainly there were times when all the teachers demonstrated a single recommended approach to certain procedures. Some teachers tended to employ this prescriptive technique more than did others. On the other hand, all the teachers who were observed found opportunities to encourage their students to generate and explore alternative strategies for approaching problems. A later section will discuss in greater depth when this teaching technique was used primarily to foster self-sufficiency.

Accompanying or occurring shortly after the generation of alternatives came the examination of the consequences of various courses of action and of different conditions. As implied in the previous section, some of this exploration of consequences took place as a result of physically trying ideas out, while another equally-important approach involved a mental analysis of expected results.

The "what if" discussion and its variations comprised one of the primary means of mentally testing consequences without actually experiencing their presence in the classroom. In these discussions, teachers--and occasionally students--asked "what if this were done" or "what if that occurred?" "What if it gets colder after you plant?" "What are some of the pros for keeping a baby" "What about (if) when you spank a child but tell them not to hit?" "What happens if the printing plate is not cleaned thoroughly?" Students were required either to draw from their own experiences or to reason logically what might happen from other information they knew.

The "what if" process fostered skills in anticipation, avoiding the negative ramifications of constructing harmful and/or dangerous situations. It was not necessary to ruin printing jobs, to become pregnant, to actually plant crops under all conditions, nor to change each part of an engine. Mentally projecting the results of diverse scenarios created a broader range of possibilities, conserved time and energy, and modeled a problem solving process that could be used in many different settings.

The converse of this process was also found in some of the classrooms. It was possible to scrutinize certain consequences in order to assess the appropriateness of the actions that had preceded them. For example, the printing instructor explained that similar problems occurred with printed products when either the printing plate was not clean or when the amberlith was not cut correctly. Recognizing the peculiar flaw in the outcome, it was possible to narrow the range of potential problems in what had taken place to have brought about the difficulty. Undesirable qualities in plants, individual dishes and meals, engine operation, and computer programs were analyzed in a like manner. This post hoc cause/effect investigation was, of course, less reliable--and valid--in situations which involved people and their relationships; probably for this reason, anticipating consequences was observed in classrooms primarily studying these areas while post hoc analysis was not.

The consideration of consequences, actual or projected, was a critical part of the "thinking through" process. Consequences provided essential information, necessary points of reference, against which the definition of problems, the determination of goals, and the selection of means could be checked and reformed if proven unrealistic or inappropriate. The dynamic and interactive nature of the problem-oriented process is especially evident when the element of consequence examination is considered.

Once a solution to the problem was developed, the process did not necessarily seem to come to an end. It was interesting to note that, in many respects, solutions functioned in much the same way as did consequences; they were not viewed so much as end products as they were indicators of progress toward a more focused end. An observer felt that a first solution was something like a rough clay figure on which much detail work and polishing would still be done. It was similar to the first draft of a manuscript which would undergo much editing, fine-tuning, and refinement.

A weld was completed. The teacher examined it and observed, "That is pretty good but it could be better. Why don't you run another one?" Students reviewed the customer comments on their noon luncheon. One in particular caught their attention: "The sandwiches were burnt." The teacher said, "Yes, they were burnt. What could you have done?" The typists gave their completed letters to the head typist and to the office manager (teacher) for review. As often as not, the letters were returned for retyping, their errors noted. A class developed a computer program designed to reduce corn loss. The teacher brought the group together with the directive, "Let's do some correcting. . . . What is wrong with this program? What would you do to make the correction?" In response to a student's suggestion, he noted, "Good idea. Might want to jot that down in your notes." A little later, he instructed, "Well, get rid of that."

Doing and redoing, trying and retrying, in an environment that allowed and expected experimentation and frequent set-backs, was typical. The setting provoked one student to explain, "You learn by your mistakes." When asked what kind of student benefited most from an auto mechanics class, a teen replied, "If they take it serious enough and they're not afraid to try things. If they don't want to try anything so they don't look stupid, then they're not going to gain as much because they won't be seeing trial and error there."

The approach was not always easy and its implications necessitated a great deal of perseverance on the part of students and teachers alike. Scenes like the following were not uncommon:

> The ag shop teacher walked over to a student who had completed a weld and observed that the project needed nuts attached to a rod that had just been joined by the weld. "Too bad we didn't think of this earlier," he commented. The student did not appear discouraged and asked, "How should I break it?" The teacher looked carefully at the weld, "It depends how good your weld is. Why don't you go over and get the metal cutter and try it?" Before the weld was severed, the student had tried three cutters and employed the services

of two other students and the teacher. He was then ready to begin again.

The degree to which experimentation and redoing was encouraged or possible was different in different classrooms. Some programs such as the printing and food preparation classes were definitely production-oriented and had to meet certain expectations and timelines. However, even in these settings, time flexibility and opportunities for discussion gave students opportunities to refine their work and to learn from mistrials. The educational orientation of the classroom did not appear to be greatly compromised by the product-focused nature of the program.

Pool of Relevant/Necessary Knowledge

The section which follows describes the knowledge base on which rested the process activities just discussed. Teachers and students continually tapped into this resource as they went about the course of defining and resolving problems.

Sources of information. Information for defining and dealing with the problems found in vocational classrooms came from several sources and varied among the different classrooms. A few used films, speakers, text books and/or worksheets on a regular basis; however, the problem orientation of the programs seemed to call for a more flexible, readily-accessible source of knowledge that could be tapped immediately. The practical as opposed to the abstract nature of the curriculum also appeared to open other avenues for information.

For these reasons, people become important sources of knowledge. Not surprisingly, teachers most often provided information in the form of "mini-lectures" or demonstrations that allowed the problem study process to proceed. Some teachers seemed to enjoy opportunities to explain procedures or to discuss alternatives and/or consequences while others preferred to draw information from students through a series of leading questions. These teachers frequently brought the questioning episode to an end by summarizing information often drawing out a principle which explained the cause/effect or other relationship of several variables. These principles will be discussed in more detail later.

Many problems dealt with situations with which students had had experience. Consequently, the students themselves had knowledge that, if skillfully tapped and related to the issue at hand, contributed to the necessary information base. Students were asked the current rate of interest at area banks, the kind of crops important to the local geographic area, what happened in their families when a new baby came, and the correct kind of light to use with a particular film. If students had difficulty answering more technical questions, they were frequently directed to books, worksheets, and class notes.

> The print shop teacher asked a small group of students what happened to the image when black letters fail to appear on a red background as photographed. Different students made conjectures. The teacher replied, "I like what you are saying but you need to go further." He instructed them to go back to a worksheet they had done previously. "It will give you a

> pretty darn good clue. It's on the front side of the worksheet."

As suggested earlier, pupils also went to their fellow students when they needed information or ideas to proceed on a task. A typical two-minute interaction in the foods lab found questions such as the following being asked within the group of students: "Which design am I supposed to use to decorate this cake?" "How come this is so soft?" (patting the cake) "What size pan should I use?" "How much meat should I use?" A teacher would have had to be omnipresent to provide all the desired information; sharing of student knowledge filled the void.

Knowledge also came from the laboratory environment which provided opportunities to learn from observing natural phenomena. A teacher sent his class off to the shop with unfamiliar tools and the instructions: "Go and try it; see how it works." Students listened carefully to the ticking sound of the farm tractor's engine; the teacher related the abnormal sound to possible valve problems. The marketing instructor organized several sales activities throughout the school year in which students distributed products, collected money, and kept records. Missing merchandise, unanticipated slow or fast sales, and procrastinating sales people provided fuel for what should be done "next time."

The need for diverse and readily accessible knowledge prompted teachers to instruct students in ways to obtain necessary information themselves for particular uses. One of these ways involved honing skills in being able to ask good questions. Before a speaker came to class, a teacher told his students to develop three questions concerning the agency the speaker represented; before another speaker began his presentation, the group of students was instructed to "write down questions as we go along that you might want to ask him." Students reflected on questions before they went on field trips; they were asked what they would study if they wanted to study everything possible about a specific topic. A teacher interrupted the flow of discussion to ask, "Is that all you need to know? Do you need any more information?"

Learning when information was needed and how and where one would go to obtain it were important to the problem framing and solving process. The skills seemed to support and foster the independence and self-reliance qualities that appeared so closely related to the larger process. Questioning also signaled another important attribute.

> I think if students are questioning and asking questions, that means that they're thinking. Something's going on. I like kids to ask questions and I feel that that's a sign that at least I'm getting them to think. That's really my main objective.

Kinds of information. Most of the knowledge used in classrooms during the observation period was of a procedural or "how to" kind and of a "factual" variety, both technical in nature. How to make a quality print, cook an appealing/nutritional meal, balance a budget, and sell a product were discussed and practiced. The size of an acre, the kinds of business letters, the part of an engine were pieces of information students were expected to know and be able

to use. Without a doubt, technical knowledge was important in the problem-oriented environment of the vocational classroom.

However, other forms of knowledge were also evident and, although these may have been less common or apparent, they are noteworthy. The first of these involved the clarification of meanings. A teacher observed, "So you think fear is not really the same as respect." Students examined the numbers on seed corn as the teacher asked, "What does that mean?" A student pondered the construction of a computer program and questioned the basis of a proposed command, "But, doesn't it mean something else?" If one were planning to use information toward a particular goal, it was essential to have a commonly-agreed upon definition of concepts and the elements which comprised them. In some cases, the clarification of these concepts involved rather concrete items; in other cases, the issues were quite abstract.

Occasionally, examination of assumptions was observed, although it was not as common an occurrence as one might have expected. The following illustrates an instance from a classroom in which meanings and assumptions were openly discussed:

> Teacher: "So, you're saying parents have to accept some things about being a kid?"
> Student: "Yeah. Some things you can't change. Nothing will be perfect. What if you really have an ugly child? You have to accept that."
> Teacher: "I see. Some things you can't change."

However, it was more likely that students and teachers both appeared to take for granted that something was desirable (e.g., to sell as much as possible, to follow fashion and grooming trends, and to conform to the wishes of employers and clients) and did not question its basis. Whether oversight or a firm commitment to promoting ultimate employability, the lack of discussion of assumptions and norms was evident. Thus, the process of "thinking through" was generally done within some predefined parameters of acceptable practice.

Another less technical form of knowledge found in vocational classrooms that was related to problem examination will be identified here as abstract or organizing principles. Again, some teachers were more inclined to encourage discussion of this kind of knowledge than were others. The principles served to generalize the use of information into clusters of related problems. Relevance was raised from the specific to the general. Often the teacher presented the principle after a discussion of specific rules.

> A student asked where winter wheat was grown. Other students suggested particular states and regions. After accepting these responses, the teacher stated, "You grow winter wheat wherever the ground freezes. You need freezing as part of the life cycle if it is to reproduce."
>
> A teacher examined a student's printing plate, commenting, "Boy. It's nice when everything goes all right." He explained that it was better to test ideas by making blueprints

> of her jobs first, rather than wasting plates. "You make blueprints rather than plates because you want to save time and money."

Occasionally, examples of other kinds of knowledge and thinking were seen--such as analysis, "OK. Let's tear this apart and share what you know." The problem centered environment of the classrooms made these elements of higher order problem solving "naturals" in daily activities. For this observer, it was exciting when they were found; it would have been more exciting had they taken place more often.

Uses of information. Finally, and in summary, it can be said that the pool of knowledge or information and the thinking through process played back and forth at each step. Relevant information was used to study and identify problems, to set goals, to generate alternative strategies, to examine consequences, and in the end to refine solutions. When sufficient information was lacking for undertaking a certain operation, students--and sometimes teachers--paused and looked elsewhere for what was needed. Some classrooms focused more upon the process component of the problem-oriented environment, others upon the knowledge. All recognized and used each in combination with the other as they concentrated upon defining and dealing with the problems around which their program revolved.

Postscript

> *I think if students are questioning and asking questions, that means that they're thinking. Something's going on. I like kids to ask questions and I feel that's a sign that at least I'm getting them to think. That's really my main objective. (Teacher)*

CHAPTER VI

LEARNING TECHNICAL SKILLS*

It is not surprising that observations of secondary vocational education programs and interviews with its participants lead to the identification of technical learning as a major dimension or theme of vocational education. Embedded in the fabric of vocational education is the underlying assumption that the learning of technical skills is an essential aspect of preparation for work.

Nature of Technical Learning

The term "technical" has a broad range of meanings. The classical Greeks, who exerted considerable influence on our thinking, conceived of technical activities as having lower status than activities of seemingly greater cognitive activity. To the Greeks techne referred to practical, productive activities involving "manual craft" or "cunning skill" which existed separate and apart from scientific (theoretical wisdom) or cognitive (intellectual excellence) abilities (Kasprzyk, 1980). To DeVore (1980), technical learning is part of the process of matching the use of technology with human action. The use of intellectual processes in conjunction with tools and techniques are not only assumed to occur, but is considered necessary for successful life.

In our observations and interviews, the technical learning which occurred included both intellectual processes as well as the development of skill and techniques. Both are included in our understanding and operational definition of technical learning, how to do specific tasks related to work situations.

Methods of technical learning. Technical learning, like most other forms of learning which occur in secondary schools, involves learning certain concepts and, through practice, becoming adept in their use. This use is often evaluated by students' demonstrations of particular skills and accomplishments of certain tasks, or application of technical learning toward the completion of a particular project. In an office education class, students work toward the goal of attaining a certain typing speed or a degree of accuracy. In the production graphics class students demonstrate their knowledge of the concept of ink and water balance on the offset duplicator. In distributive education classes marketing concepts are applied when some of the students develop their own entrepreneurship or sales marketing projects for competitive events at the district, state, and national levels of youth organizations.

Many of the secondary vocational education programs that were observed included simulated work activities. Two times a week a home economics food service class operated a food service facility, selling lunch to the faculty, administration, and guests. At a secondary vocational center, the office education classroom was an actual office. It was located in an area where school visitors often perceived the class to be part of the school's secretarial pool.

*Theme author was Steve Scholl.

Similar simulations occurred in the other classes we observed. In the auto mechanics class, students took on the role of an auto mechanic while repairing their own automobiles. Some, who were particularly adept or experienced in the necessary procedures, were allowed to repair the vehicles of individuals outside of the school. In such cases, the student would be required to discuss the problem with the vehicle's owner and explain the repair procedure. In agriculture many of the simulation activities were, in fact, actual farm or farm-related activities. These activities often involved animal husbandry, machine and equipment maintenance, and recordkeeping.

An integral part of the curriculum. Technical learning often seemed to be more than just a theme of secondary vocational education. It was usually the focus of the curriculum; it was what students noticed when asked about the class. The nature of technical learning in the curriculum of vocational education was called to our attention in an interview with a vocational director.

> It seems to me that in almost any kind of occupational endeavor there's need for some types of skills that you acquire that are manipulative of either tools and materials or with people, and those are the things that vocational education deals with.

An office education teacher talked about technical learning in this way:

> In my junior class, where I have the office procedures, the first month is nothing more than a typing review. Then I go into one week of basic business math, percentages and decimals, so that they get on the calculators and they know what to do. That's extremely important. Then I have a typing packet which has fifty jobs.

This teacher felt it was his duty to instill among his students the importance of "having a skill so that you can go out and earn a living." It seemed evident that his basic assumption was that "there are specific skills you need." If this teacher were to excise the technical learning from his courses, what was left may be unrecognizable as vocational education.

In the agriculture and graphics classes, technical learning guided the development of a sequence of courses. Teachers in each subject told us that technical experiences were offered during one year so that a student would be ready for a more difficult experience during a succeeding year. We also were aware of situations where the technical learning of a subject was thought to be too broad for one year in a student's development and students would concentrate on different skills each year.

A noticeable characteristic. In our conversations with secondary vocational education students, technical learning was a conspicuous component of vocational education. We asked students' for their perception of the purpose of the class, their reasons for taking the class, how they would describe it to a friend, how it was meeting their needs, what they wanted from the class, and how it helped prepare them for what they wanted to do after high school. Technical learning was the focus of many responses. Some typical responses to the question on the purpose of the class were:

- to teach kids skills;
- to learn how the press works; and
- to teach people about cars, the way they work, minor repairs, and how to fix them.

Technical learning was also apparent in students' responses to a question regarding the two most valuable things learned in the class. The "valuable things" which they described were often skills, and included being able to:

- market and sell goods;
- operate different types of equipment; and
- speak to and work with people.

Students felt vocational education classes were preparing them with technical skills in different areas such as, printing, commercial cooking, homemaking, and farming.

Observations of Technical Learning

Secondary vocation education programs in four service areas, agriculture education, business and office education, home economics education, and industrial education will be described. The purpose of these descriptions is to portray examples of the technical nature of vocational education in secondary schools.

Agriculture education. "Ag mechanics" is a yearlong class for juniors in a rural Minnesota senior high school. It is described in the school's course catalogue as a course of: machine and tool safety, project cost estimating, use of repair manuals, mechanics, shop construction, and repair projects. What this means in actual class activities and the amount of time devoted to each activity is indicated by the plan shown in Exhibit 1. Although the plan endured some modifications during the school year, it still accurately reflects the technical nature of the curriculum.

Typically, a day begins with ten to twelve students entering the classroom and sitting in chairs along rows of tables. After the instructor has taken attendance and discussed FFA (Future Farmers of America) business, the words "Okay, let's go to work" or "Okay, let's go out into the shop" are uttered. Those who are not involved in further FFA business go through an adjoining door into the shop. In one corner a student is working to repair one of the electric welding machines. A row of tool cabinets covers one wall, while overhead doors which allow farm machinery such as tractors and combines to enter are along another wall. Some students are working together on rewiring a Ford tractor while others are repairing the exhaust of a John Deere tractor. In another area of the shop a number of other students are welding, some practicing, while others are completing actual projects. One project, which is beginning to attract the attention of students and is causing them to leave their own work, is the imminent starting of the engine of an old Ford tractor which has been overhauled in this class. On this cold March day the overhead door has been raised and the tractor positioned so that its exhaust will not be inhaled by those inside. After several unsuccessful attempts, the engine roars to life. The students cheer and share in this feeling of accomplishment of bringing this old tractor back to life.

Exhibit 1

Teacher's Curriculum Outline

Date		Activity
8/29 to 9/2	(1 week)	SOEP (Supervised Occupational Experience Project) Shop Safety FFA (Future Farmers of America)
9/6 to 9/23	(3 weeks)	2/4 Cycle Engines
9/6 to 10/14	(3 weeks)	Small gasoline Engine Overhaul
10/17 to 12/9	(8 weeks)	Combines
12/12 to 12/16	(1 week)	Electricity
12/19 to 12/21	(1 week)	Electric Motors
1/3/ to 1/13	(2 weeks)	Electricity: Shop
1/16 to 1/27	(2 weeks)	Safety
1/30 to 2/3	(1 week)	Machine Maintenance
2/6 to 2/24	(3 weeks)	Tractors
2/27 to 3/9	(2 weeks)	Hydraulics
3/12 to 3/16	(1 week)	Tillage
3/19 to 4/6	(3 weeks)	Planters
4/9 to 4/13	(1 week)	Tillage
4/16 to 4/18	(1 week)	Machine Safety
4/24 to 5/4	(2 weeks)	Projects
5/7 to 5/18	(2 weeks)	Concrete
5/21 to 5/25	(1 week)	Plumbing

Technical learning activities also occur in the classroom. As part of a unit on planters, the teacher explains the fundamental concepts of mechanical planters, and equates the two major types, drum and disk. During a subsequent audiovisual presentation, the students are given information on:

- the selection process of a particular type of planter;
- plant distribution;
- seed shapes and size considerations;
- planter place specifications; and
- the compatibility between planter plate and seeds.

The next class session, students are asked to calculate the dimensions necessary to adjust a particular planter to match cultivation equipment configured to certain specifications. There is also a discussion where students identify tractor speed, tire inflation, planter drive, wheel size, field conditions, and the number of cells in the planter's plate. On the third day of the planter instructional unit, before their test, the students are informed of the various applications of different planters, discuss the manufacturers' marketing techniques, and analyze the pressurized drum planter.

Business and office education. The model office classroom is a simulation of a business office. The simulation is so real that the unwary visitor is often fooled, as the class appears to be part of the school's paid clerical and secretarial staff. Rather than being located within a specific classroom, it is located in a partitioned office area. Observing this situation, one sees different students using various pieces of office equipment: typewriters, computers, and calculators, while others are conferring with each other regarding particular problems they have encountered on the job. One student says, "How's it going?" as he walks by some friends. Another student remarked, "I want to go on vacation!" The impression is that this is an actual office rather than an office education class.

The specific skills and competencies students acquire in this class are spelled out in the course outline (see Exhibit 2). The language used would be very familiar to a person working in a business.

In this setting, students are performing the roles, for two hours a day, of the various employees of a fictitious paper company. Students select "jobs" in the different departments, giving them a breadth of experience. For all of these positions, technical learning is a significant part of the learning process. The auditor, who is the head of the statistical department, thinks of the job as being "pretty easy" although the student admits to having to learn and use different formulas "for certain things" while also remembering "what to do for this one and then what to do for the next one."

Among other duties, the person presently occupying the position of receptionist has been learning how to develop an in-house bulletin, issue checks, and make appointments. Regarding the in-house bulletin the student explains that the content has "to be put in my own words and typed out in forms.

Exhibit 2

Skills and Competencies Acquired on Completion of Course

1. Computer operator
2. Word processing operator
3. Reconcile bank statements each month
4. Receive W2 forms and do individual tax returns
5. Conduct staff meetings on pertinent business subjects
6. Learn how to take notes at business meetings
7. Operate and transcribe on dictating equipment
8. Refine skills on calculators and typewriters
9. Filing techniques
10. Telephone etiquette
11. Routine bank transactions
12. Accounting procedures

The closest thing to a classroom session which occurs for the class is a staff meeting. During these regularly scheduled meetings, different students make presentations on topics relevant to people in the positions simulated. Such things as employee benefits and recreational activities are topics which are discussed. However, the real objectives of this course are to prepare students for employment outside of the school setting. Exhibit 3 outlines these objectives.

Home economics education. In a real, rather than simulated situation, the food service class of a high school operates a restaurant for the school's adult staff and their guests. Two days a week the students serve the customers, while the other three days are used to prepare the food for the serving days. They also make decorated cakes which are sold to members of the community.

During a preparation day, a visit to the food service class might reveal a variety of activities. One day the students are gathered together in the classroom, which is across the hall from their food service area. Sitting at cafeteria tables the students, the teacher, and the special education aide are watching a slide/tape presentation on cake decorating. Although they are attentive, their teacher has to exert some pressure to get them to accept the fact "that although it's Friday, we're still going to get some work done!" After the slide/tape presentation ends, the students begin decorating their own five-inch diameter paper circles with frosting. Some of the students have used ideas from magazines for the designs they sketched onto their paper, while others have been original and generated their own designs.

Some days are also spent on such activities as planning meals and taking tests. Exhibit 4 gives an example of the kind of questions students must answer on a test. These particular questions focus on math skills.

Exhibit 3

Objectives Accomplished at End of Course

1. Students learn how to utilize their saleable skills in job positions and learn and understand the meaning and importance of neatness and accuracy combined with proper and efficient utilization of these skills.

2. Students learn the importance of their job positions in a company, the inter-relationships of departments, meeting deadlines, and to understand their responsibility in making office procedures work effectively and smoothly.

3. Students learn to practice proper attitudes and work habits in an office setting. Many students acquire the forgotten work ethic after nine months of Model Office.

4. The human relations aspect is quite prevalent in the Model Office simulation. You have many students working together to meet deadlines to assure the continuity of the work flow in the office. A student must be able to work and get along with co-workers if they are to survive in the world of work.

5. By the time the course is completed, or by the time the employee feels ready to tackle the "real world," the goals of this Model Office is to develop further the skills and especially the confidence and assurance these students need in order to answer those newspaper advertisements. It is the goal of this Model Office to help the students find the position that will satisfy them not only monetarily, but also one into which they can fit with ease and find enjoyment.

About half-way through the two-hour period it's time for their break. Although they were initially reluctant to begin their activities, only six or seven students leave to take time out. When these students return, they and the others are given a demonstration on how to make a rose two different ways. Amid exchanges of "Miss L is this good enough?" "Sue, you just need to be a little more gentle," they continue their practice at decorating cakes.

On the days immediately preceding a food serving day, the activities are somewhat different. Class is usually held across the hall in the food service area. The food service area is partitioned into separate kitchen and eating areas on serving days. Visiting on such a day, an observer would find the students in different areas of the room performing various tasks. Along the far rear wall, where the ovens, ranges, and grills are located, three or four students are engaged in frying chicken, making soup, or grilling cheese sandwiches. Toward the center of the room, on moveable preparation and cutting tables, six or seven students are engaged in preparing additional foods. One student has a large piece of dough and is rolling it out for cinnamon rolls for

tomorrow's meal. At an adjacent table two other students are decorating cakes to be entered in a contest. Other students in this area are following recipe instructions and cutting, slicing, peeling, and combining different ingredients for other dishes which are part of the following day's meal. Moving between the cabinets and the dishwashing station are other students. They have been cleaning the dishes and utensils the food preparation people have used and are replacing them in their proper location.

Exhibit 4

Sample Test Items

You are the manager of a local restaurant and must take your monthly inventory of supplies and calculate your percentages. Given the following totals complete the surplus and percentages below.

Monthly Inventory Percentage Form

Food & Spices:			
Preceding Month	$12,000		
Purchase	24,500		
Total	_____		
Current Month Inventory		$9,500	Amount Used _____
			Gross (Restaurant) Sales $100,000.
Total Used	_____		
			_____ %
Liquor:			
Preceding Month	$ 4,000		
Purchase	$ _____		
Total	$27,300		Amount Used _____
Current Month Inventory		$21,000	Gross Sales (Liquor) $35,000.
Total Used	_____		
			_____ %

It is now serving day, and customers have been entering the eating area. Various students give instructions and requests to other students and their teacher, who is continually "working the crowd" with advice and demonstrations. "Tell them to make up a corn beef sandwich" says one student. "We'll need the glass racks later," is a statement made by a food preparer to a dishwasher. "Come on guys, they're customers out there who haven't been served!" one student says to a group gathered behind the partition.

On a rotating schedule, students act as waiters, cooks, dishwashers, and cashiers along with other jobs. The waiters greet the customers at their table, take their order, and bring the order to the students in the food preparation area. They also clear the table when the customers have left and set the table for succeeding customers.

Once the three waves of approximately sixty customers have eaten, paid the student cashier and left, the students, teacher, and aide serve themselves, relax, and eat. However they cannot spend too long eating, as they must clean and replace dishes and utensils, wash all the equipment, and clean the floors before the bell rings.

Industrial education. The auto mechanics class is a one semester, two hour class which students can take only once. Typically, an observer will find the student working in the shop rather than sitting in their classroom desks listening to a lecture or watching a demonstration. As we walk through the small classroom which we enter from the hallway, only a few of the twenty-six students are here. We can see many of them on the other side of the glass wall, out in the shop. Entering the shop area, we notice two lines of cars, with some simulation systems constructed out of junked autos at the front of one line.

Adjacent to the door is a fairly new Oldsmobile. A student dressed in coveralls is working furiously to remove its engine, but has difficulty getting it to clear the car's frame. Two or three students who gathered around to watch the engine come out are going back to their own work. Behind the Oldsmobile two students are lubricating a van which is raised in the air by one of the two hydraulic lifts in the shop. They are in the process of working on Unit 4 (Exhibit 5) of a total of twelve units which make up the course content.

They began their work on the suspension, steering, and drive train unit by reading a thirteen-page section in their textbook. Before lubricating the van they leave the classroom and go to the library's media center. There they obtain a filmstrip on vehicle lubrication, view it in a special room and respond to the questions on a corresponding worksheet. Now, using the worksheet, they are lubricating the suspension of the van. They will also change the oil and filter. A similar process of first viewing a filmstrip, then completing worksheet, and then doing shopwork are included in this unit for steering and suspension components and the drive shaft and universal joints. After completing the worksheets and performance exercises, they will respond to a written examination and a teacher-directed performance test.

Next to the van, between the two lines of vehicles, two students are changing the tires of a set of wheels. They are engaged in one aspect of the unit on wheels and tires. Before changing the tires they also view a filmstrip and complete a worksheet. They will also be taking a written examination and a performance test on the unit.

"How you do on the test affects how many hours you get," the teacher remarks to a student who inquired about a written test on the unit. After making this comment the teacher resumes talking to seven or eight students gathered around the lift, which is supporting a Pontiac station wagon. It's

the principal's car and a student who has extensive technical background is overhauling the brakes. Talking to the students, the teacher states that when the "Pontiac came in, the bearing's inner race was moving on the spindle, which was measured with a micrometer and explains, "that's why we're replacing the spindle, too."

Exhibit 5

Sample Unit of Instruction

Unit #4 SUSPENSION, STEERING, AND DRIVE TRAIN 8.5 Hours & 1 Free Day

* Read - Reader's Digest, pp. 189-202.

A. Steering and Suspension Fundamentals
View: FS 1368 while completing corresponding worksheet.

B. Steering and Suspension Fundamentals
View: FS 1369 while completing corresponding worksheet.

C. Vehicle Lubrication
View: FS 1588 while completing the corresponding worksheet.

D. Identify and Inspect Steering and Suspension Components
Worksheet: Steering and Suspension
Performance: With a vehicle raised on the hoist, you will be able to identify and inspect all parts listed on the worksheet. See your instructor.

E. Complete Automobile Lubrication and Safety Inspection
Worksheet: Safety Checklist
Performance: Service a vehicle on the hoist according to the worksheet. This includes an oil change and oil filter change.

F. Ball Joint Inspection and Replacement
View: FS 1958 while completing the corresponding worksheet.
Performance: None required.

G. Drive Shaft and Universal Joints
View: FS 2013 while completing the corresponding worksheet.
Reference: Reader's Digest Text, pp. 451-452.
Performance: D & A Universal Joint

H. Unit #4 Written Exam (Multiple choice exam based on worksheets.)

I. Unit #4 Performance Exam

After the initial classroom instruction days and six to eight weeks of work on tasks in the shop, the class resumes classroom lecture and demonstrations on ignition and fuel systems. During one classroom session the teacher distributes a simplified diagram of the components of an ignition system. He asks them to draw lines connecting the terminals of each component. "You need to understand this if you want to be a mechanic, but you don't need to be a computer expert," he remarks as he puts a similar diagram on the overhead projector.

Using actual automobile components, the teacher discusses each one and explains its function in the primary and secondary ignition systems. Concepts included in this discussion include firing order, high voltage/low voltage circuits, and dwell angle. Later, the teacher gives students a distributor and asks them to replace the ignition points and properly set the gap between them. The following day the students receive the same diagram of ignition system components as the previous day. This time most of them are able to accurately indicate the proper wiring connections.

After additional discussion on ignition systems, the group goes out into the shop area to connect the large electronic engine analyzer to the "shop" car. However, the car has been specially prepared for the occasion and will not start. The teacher uses this as a trouble shooting exercise for the students to locate the problems he has caused: a loose battery cable, closed ignition points, incorrect firing order and incorrect timing setting. At the end of this instruction on ignition and fuel systems, the class is given a written examination (Exhibit 6).

Intent/Result: Why Is It There?

Technical learning functions as a facilitator of three processes: development of technical skills, provision of an alternative learning environment, and promotion of students' interpersonal skills. Through technical learning, students develop actual job or work skills. This skill development occurs in a context different from other classes, and contributes to students' sense of self.

Skill development. Students often described the development of technical skills was one of the most valuable things they learned in the class. Some students demonstrated an understanding of the relationship between technical learning and their future. For one student skill development resulted in knowing: "How to look for a job," and "How to be a wise consumer."

Students also indicated an awareness that the skills they were developing in their vocational education classes would be useful in the world of work. "It will prepare you for a job later on in life," was how one student responded to being asked about the purpose of the production graphics class. Asked how the food service class was "meeting your needs and interests," one student replied by describing the transition from school to work using skills developed in vocational education.

Exhibit 6

Sample Unit Examination

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1. List the six circuits of the typical carburator.
   a.
   b.
   c.
   d.
   e.
   f.

2. What type of two-barrel carburator is often used on 4-cylinder engines to provide good fuel economy and good power when needed?

   _____

3. What part of the carburator is designed to open the choke a fraction of an inch as soon as the engine starts?

   _____

4. How many valves does the typical fuel pump contain? _____

5. The exhaust gas analyzer in our shop measures what two substances?

   _____ & _____

6. The length of time (in distributor degrees) that the points are closed is called _____

7. The device that causes the coil to operate better and to make the breaker points last longer is called the _____

8. Most automobiles have two automatic timing advance devices - name them.

   _____ & _____

9. Breaker points can be set with either a feeler gauge or a

   _____

10. The three major sources of vehicle emissions are

    _____

    _____

    _____

> I really think it's teaching me a lot of things about cake decorating, because I really didn't know anything about that before I came in here. And, plus, this will give me a lot of experience, I think, for going out and getting jobs. Because on applications, I can put down that I have some experience in the kitchen and stuff like that. I think it's been very helpful in my career.

In some situations, such as in the office occupations and distributive education classes, the transition process was facilitated by supervised work experiences. These situations involved technical skill development in the classroom during one school year with the following year focusing on both classroom and work experience. This process was described by a student in an office occupations class.

> Well, at first you have to take a year of his class of, like working on different machines . . . then the next year you go on the job. . . . It's a neat thing to do.

Teachers feel that getting the "hands-on experience first" was critical to developing students' ability for securing employment in a related vocational area. Getting the student to produce work of "good quality" was the teacher's objective in moving students from technical skills towards employment.

Independent living goals. The skills developed included the skills of obtaining credit, furnishing an apartment, planning a budget, or making decisions regarding sexuality in interpersonal relationships. Although these skills received heavy emphasis in the home economics classes, independent living skills were also an important consideration for teachers in other areas. There was an awareness among teachers that although many of the students would not become mechanics, office workers, or farmers, these skills would still be important to students as they made their way in society. The teachers were aware that typing skills could be used to put students through school or that many students in the auto mechanics class just wanted to know how "to fix my car." This awareness was expressed by an agriculture teacher who realized that his students were developing skills useful in farming but also in other areas of the students' lives.

> I guess I would see them as providing background for students who were interested in one of two things or probably both. One in pursuing such things as ag or shop courses; this to beef up their background when they get a job. If they can build their own garage or if they are a hobby farmer. If they can repair their own tractor or also in an exploratory basis for the careers specifically in the vocational area, such as a teacher, for example, or such as an agri-business person or a mechanic or whatever.

Providing an alternative type of learning. Technical learning in secondary vocational education programs is also directed at providing a different type of learning experience for students. Often this alternative learning experience is designed for students not in the school's college preparation program. One superintendent acknowledged that,

> A student taking a series in home economics or a series in industrial arts or a series in agriculture more than likely is not going to college.

It was thought that these students "come in . . . looking for specific job skills because they are not going to do anything more (in formal education) after high school."

Others felt that vocational educators needed to develop the "whole person" by "challenging the person with a variety of tasks." To accomplish this goal, theory was integrated with practice in an attempt to balance cognitive and intellectual activities with skill-based, hands-on activities, while continuing to encourage students to have fun. This need for integration of theory, balance between cognitive and psychomotor skills, and student enjoyment, were contained in a statement made by one of the teachers.

> I think the theory can be made more fun, more enjoyable and laid out in a way that they can feel more progress and meaning. If it was carefully delivered, for example, interactive computer with video disk, then you could lay some theory on. It's got to be more entertaining though, more real. If that theory is interspersed with some hands-on, kind of keep them awake and off their fanny, then I think you could lay the theory on them.

To one of the students in that teacher's class, the difference between that class and other classes was apparent.

> It's not like taking a lot of notes and then taking a test on it. It's more like learning about it and doing it, and then remembering what you've done.

Besides serving as a vehicle to integrate theory, technical learning also functioned to balance the cognitive aspects and technical learning. To some students, vocational education was "more of a skills class than a mind class," while adults acknowledged that" everyone learns in different ways," and that because vocational education was "not as theoretical, some kids learn better that way." This was especially true for the student who observed that technical learning of specific skills leads to knowledge of other, previously unknown skills.

> It's not like doing the same sort of thing over and over. It also teaches me many skills I didn't think I had before.

Self and social skills. Technical learning is also associated with students' development of skills involving the enhancement of their sense of self and their ability to interact with others. By engaging in a learning process in which they develop certain technical skills students become more confident in their own ability. To one teacher this meant that "It teaches them what they're good at." As a result of the recognition students receive for their work, their ability to accomplish that work and being able to quickly notice those accomplishments, students developed qualities of self-confidence and leadership.

One teacher described a process in his instructional program in which students continually were experiencing a "variety of technical challenges" which led to the development of a positive image of themselves. This notion was supported by a student who described how this self-confidence helped her address a technical problem on her own. "My car breaks down and I feel so great because I know what's wrong with it."

The challenge of having to work cooperatively with others to learn technical skills was suggested as contributing to the development of interpersonal skills. A student in the food service program compared the cooperation required in food service operations with the cooperation needed on an athletic team.

> It does take a lot of teamwork to do it. Like let's say I have something on the stove and somebody else has something, and if nobody else told me it would just burn. And, like if you're on dishwashing and something's hot and nobody tells you, you're eventually gonna burn yourself. You just have to have a lot of communication going on, teamwork, mostly teamwork. It's like basketball players, when they're on the court they need communication and teamwork and that's what we need in there.

Others thought that learning different technical skills led to leadership and responsibility. As students would become more skilled as they progressed through related vocational education classes, they were called upon to help other students and leadership and responsibility were thought to develop as a result. Having to help others "makes you a little more responsible" and causes the student to be seen as a "leader" by others. Therefore students "Are not only learning a skill, but they're learning about managing themselves."

The Technique Involved in Technical Skills

One aspect of technical learning involves learning the techniques associated with technical skills. Techniques are the styles associated with technical skills. For example, a technical skill in auto mechanics is the ability to replace the brake pads on an automobile. One technique involved in this skill is the particular way a student may have for tightening bolts without getting them too tight. However, there is not a definite line of demarcation between skill and technique. Although technique can be a mechanic's own method of tightening bolts, it becomes a skill when overhauling an engine because then bolts must be tightened to specific settings with a special tool. Generally a technique contributes to efficiency of a skill, and can influence the outcome of technical learning. In printing, while the technical skill of operating an offset duplicator may include adjusting the machine, preparing the plate, and trimming the printed stock, there are certain techniques involved which determine the success or failure of the process. A student having the skill to prepare a plate, and set-up the duplicator will be unable to print many copies without imperfections unless that student has developed the technique of maintaining the adjustment of the duplicator's feed and delivery systems, ink and water balance, and handling of freshly printed stock.

It was difficult to find explicit evidence of techniques being the goal of instruction in the programs we observed, but we did observe de facto evidence of their existence. Technical skills in food service included the ability to assemble and correctly combine the ingredients for a fish entree. The techniques associated with this skill would include the degree of efficiency in which the materials were assembled and the manner in which they were cooked. The students ability to prepare food which was tasty, not burned, and served in an attractive manner indicated their development of both skills and techniques.

In one agriculture class, mention was often made of the fact that students enrolled in the program were not actually living on farms. There were many students who resided "in town" or on "hobby farms." The teacher wanted the students to be aware of the way in which activities occurred on a farm. In this class, technical skills would include seed selection, row spacing, and fertilizer application. Technique would evolve from the experience of living on a farm and having the broad, contextual perspective resulting from that experience. Corn planting would not be considered just a seed planting exercise, but an activity which fits into the survival process of the farm.

On a broader scale, the student's attitude toward work, or work ethic, which was discussed as part of the hierarchical concept of technical learning and which is often a result of incremental work experiences, is also part of technique. Students with this technique, of being conscientious workers, were often positively valued by their teachers and received encouragement and reinforcement for their efforts. In many of the situations: office work, food service, retail sales or auto mechanics, the technique of wanting to work to please someone, or do a good job was closely related to the student's success with related technical skills.

Postscript

> ***It's not like taking a lot of notes and then taking a test on it. It's more like learning about it and doing it, and then remembering what you've done. (Student)***

CHAPTER VII

EXPLORING LIFE ROLES*

One of the purposes of vocational education has been to allow students to explore various occupations in an effort to help them make informed career decisions. We found this process taking place in vocational education classes.

Super, Starishevsky, Mathlin, and Jordan (1963) describes exploration as "activities, mental or physical, undertaken with the avowed or unconscious purpose or hope of eliciting information about oneself or one's environment, or of verifying, or arriving at a basis for the decision, conclusion, solution, or hypothesis, or of being entertained, challenged, or stimulated" (pp. 57-58). Super's definition focuses on gathering information and thinking about that information in terms of one's own career choice. The terms we will use to describe this process are searching and scrutinizing. Students who are in the process of searching are finding out who they are, what they can do, and what exists for them in the world of work. Scrutinizing is a process by which students attempt to thoroughly examine how the information gathered through searching and inquiry applies to their own lives. The students may ask such questions as "Do I like this?" or "Is this for me?" Students are making an effort to think about a particular career in relation to their own skills and interests.

This theme will begin with a discussion of exploration as a purpose of vocational education. The process of exploration will then be described as searching, then scrutinizing.

Exploration as a Purpose

In the interviews which were conducted with teachers, counselors, principals, vocational directors, and superintendents, each respondent was given the opportunity to prioritize three purposes of vocational education. These purposes included exploration of careers, training for specific jobs, and preparation for further education. Exploration of careers was seen as a high priority in terms of purpose of vocational education at the secondary level. Different reasons were given for assigning a high priority to exploration.

> **Students change their minds too often to be able to do more than explore while at secondary school age.**
>
> **Students need to have a chance and a time to get exposure to different areas.**
>
> **Students need the opportunity to know if they will like or enjoy something.**

*Theme author was Steve Scholl.

> Students need to receive "Hands on experiences that they don't get . . . in a lot of other classes."
>
> High school itself "Is just very exploratory."

Even those who did not see exploration as a high priority, acknowledged that "there needs to be more career exploration" but that it should begin earlier, before students reach high school. This perspective was explicitely stated by one teacher.

> Career exploration. We've got to remember that to have a functional society that's economically productive and mentally and technologically productive, we're going to have to have people that enjoy what they are doing, feeling that they make good choices, being able to put their whole efforts into it. . . . And I think you have to start getting people to think about those things at a younger age. I don't mean that you should take away their childhood, but I certainly think that by the time they're thirteen or fourteen years of age they better start thinking about some of these things. . . . Because how many times do you hear about the kid who's a sophomore in college and he's trying to decide what to do?

Even though they were only asked to prioritize the different purposes, some of the school adults also volunteered their feelings about the appropriateness of specific job training at the secondary school level. There was agreement among the respondents that high schools were not an appropriate site for specific job training. The reason given was that secondary school was too early to begin channeling students who are only fourteen to sixteen years of age into specific jobs, and that "You are taking too many other opportunities away from students by emphasizing one direction."

Exploration for Who?

Although many of the responses indicated that exploration should receive the highest priority within vocational education, there was some question whether all students should be included in exploratory vocational education. Students' individual differences were noted, and it was suggested that opportunity for vocational exploration would be more appropriate for certain "types" of students. Some adults thought exploration would be more appropriate for those who were not yet sure of their career direction, while others thought of vocational education as having varying purposes for students.

> For some it's purely a course to explore. Others know ahead of time that this is what they like to do. For them it (vocational education) has that purpose, a preparation. For some it has just the purpose of another subject.

Exploratory activities, however, were more often recommended for just the "non-academic" or "vocational" students. It was felt that these students needed exploratory activities to help them select a field for future work or just to keep them coming to school.

> There are a lot of kids that are not academically interested in those so-called "academic things." Not that they're not intelligent, but their interests lie in vocational areas. So why shouldn't we provide that for them?

Others thought exploratory activities were for the purpose of developing "an awareness of the whole process of our economy and the different facets of levels of employment and the kinds of training that are available."

Searching

One level of exploratory activities in vocational education occurred in the form of students' searching. Frequently it was the intent of teachers and other school adults for vocational education "To go beyond what they (students) already know" and have the students develop a sense of direction in their lives. One teacher commented that vocational education gives students a direction. A vocational director explained that direction resulted from being able to look at some occupations and make some realistic decisions prior to graduating from high school. He perceived vocational education students as having an experience similar to his own.

> Well, when I look at voc ed the only thing I can do is go back to my own high school education and I can look at how it worked for me. That finally gave me direction when I was in high school and I think that's what our programs do more so than anything else . . . when a lot of students leave here they know where they are going. They've got their lives planned out.

We found that students searching to achieve a sense of direction in their lives helped them find out who they are, what they can do, and what occupational opportunities are "out there."

Finding out who you are. The searching and inquiring aspects of exploration resulted in students learning more about themselves, particularly "who they are." One teacher put it in the context of leading to an eventual career.

> But it is still learning about yourself, and when you learn about yourself you will decide what you want to do, how far you want to go with it, and then you've got your tools you carry along with you.

As expressed by a counselor, vocational education "gives the students opportunities to find out who they are and where they are and where they want to go." Students also expressed similar perceptions of those general processes of exploration. In students' words the purpose of the class included such phrases as "to know yourself" and "learning about myself and others."

Finding out what you can do. A second aspect of students' searching was learning what they could do. According to one teacher, "If the student has some self-confidence, some belief in himself or herself and knows what is out there" then the student will "know what to shoot for, what to think about."

Students were perceived by school adults as trying to learn what they could do to give themselves career direction. For some it involved contemplation.

> And then there are students that are just wondering if they like foods or if they like automotive. Wondering if they like to work with woods or metals or in the food area.

For others there was more involvement.

> I do see students that are here exploring what area, what career area their choice will be. I see them looking at, I would like to be a chef, and trying, actually trying it out, trying cooking.

As a result of this awareness, a counselor thought,

> If it makes them aware of other types of careers that are out there, that might spark an interest (in) some skill areas that they want to pursue.

By knowing of their ability to perform specific skills, this counselor felt students had a "background so that they can further their education in specific areas out of school."

Students also became aware that vocational education was associated with understanding what they could do. While many stated that they were able to develop "an insight on your abilities" others cited more specific examples of knowing what they could do. Among these were references to being able to ignore disturbances while working, accepting responsibilities, and having career interests become consistent with personal characteristics.

Finding out what's out there. In addition to students finding out about themselves and their abilities through the searching and inquiring phase of exploration, students also investigate possible career positions. Many of the respondents made statements indicating they felt it was an intention of students in vocational education courses to discover career opportunities. According to one principal, vocational education provides the following:

> An exploratory experience, letting students know what the world of work is all about and what the possibilities are with hands-on type jobs. . . . And maybe even giving them the go-ahead to go on to become engineers and go to a higher level of what they're experiencing in junior high or high school.

> It increased (opportunities) because it shows them the wide variety of things, of different areas that they could go into.

A counselor had similar experiences with students.

> I think some of them find their career while they're in high

school. A number of mine have and it's through the vocational programs.

Students also described how vocational education courses assisted them in learning about career opportunities. Below are some responses from students:

Interviewer: What are the two most valuable things you have learned in this class?
Student: An idea of a career choice.

Interviewer: Why are you taking this class?
Student: To learn about marketing and to find out some careers.

Interviewer: Does this course help prepare you for what you're planning to do five years after you leave high school?
Student: Yes. It gives me insight on what jobs are in marketing.

Scrutinizing

The second part of exploration is scrutinizing. Scrutinizing involves students taking a closer look at a vocation. Scrutinizing involves asking such questions as, "Do I like this?" and "Is it for me?" Students became engaged in scrutinizing behavior through their desire to determine whether a particular career was something which was appropriate for them. This involved questioning whether a vocational education class was something a student liked or was "for me." Some students enrolled in a vocational course for the specific purpose of trying out a career. Other students realized after being enrolled in a class whether or not a career was for them.

Intended scrutiny. Some students enrolled in vocational education courses for the specific purpose of "trying out" career options. Students stated that they were taking a vocational education course "to learn about working in the business world." A counselor explained it this way:

> They don't really know what's out there and what they want to do. So they kind of play around with some of these courses to see, gee, would I be interested in this? So I'll take a couple ag classes and I'll take a shop class and . . . kind of see what I'm good at.

Others, who were approaching their entry into the real world, were beginning to put their course selections into a career-and-life-role context. An example of the life-role context, involving marriage and family decisions was described by a student in a home economics class.

> They always say, senior, you're going to graduate, get married, have kids. Well, I'm going to school and I think that after school my boyfriend and I might get married and so I kind of think this is helping me to look and see. Is he

> the one I want? Are we going to be able to live together? Is this the right kind of love that we can build a marriage on? That's what I think I'm getting out of it.

A superintendent stated that students enrolled in vocational education to get "the opportunity to find out if they really think they would enjoy it . . . but I think that the most important thing is that you develop a liking for that type of job and an appreciation for the skills it required." A counselor stated that students tried to "keep choices open" and after consideration of the choices "then you can narrow things down." This view was shared by another counselor who stated that only by taking a course could students learn if they really wanted to pursue an occupational interest.

> How do you know if you are really going to like photographics or not, if you don't have a course in it?

Students shared these reasons for enrolling in courses:

> To see if I would like to go into this field.

> I wondered how I would like working in our office compared to other occupations I am also interested in.

Results of scrutiny. For some students, questioning whether a career was for them resulted from having been in a vocational education class.

> I knew before that I liked typewriters and playing with calculators and writing notes and stuff. I knew I liked to do that, but all the pieces just came together right in the office.

It was evident that future life-roles were also questioned. One student indicated such scrutiny as a result of her participation in a family life class.

> I've always wanted to get married. Every little girl's dream. But I can see in myself, right now, that I've got romantic love. That's what she (the teacher) pointed out to me and that I would no way near be ready to get married and if I did I'd probably end in divorce and I'd be just another statistic. That wouldn't be good, so it's helped me to realize what I'm doing now rather than realize it ten years down the road.

Similar perceptions were expressed by adults. A principal remarked that "these kids find out if they really, in fact, do want to do what they're doing in class." A vocational director indicted that "sometimes they learn they don't like that kind of work."

Some students were able to explicitly verbalize the results of scrutinizing. They found that certain career activities were for them.

It let me find out that I like working on the adding machines and would like to do that.

Helped me to make sure it was what I wanted.

Some students decided not to pursue a certain career after experiencing it in a vocational education class.

Scrutinizing took various forms. In most cases, hands-on activities in simulated situations were used to provide students with an opportunity to experience a certain career. While students in agriculture managed farm accounts and raised grain and livestock, students in other areas worked in simulated offices and printing plants, or worked as sales managers or auto mechanics.

In the home economics classes, focus varied from an actual food service operation to students' life roles. In the latter class, students discussed "some of the pros and cons of keeping a baby," "decided whether we're going to have children," and the nature of mature love and reasons for marriage. While scrutinizing their career options, students were also able to develop attitudes toward various life and family roles, realizing that with some, you "can't just pick up and go."

Understanding work and family roles. Our data indicated that an outcome of vocational education is the exploration of both work roles and family roles. They discussed the differences between mortgages and loans, family responsibilities, and keeping accurate financial records. Even when career roles were the focus of the class, students were able to understand the application to life roles. This was expressed by a student who understood that the office simulation experience also helped her learn "how to deal with people," or by a home economics student who felt the purpose of the class, in addition to learning job skills was ". . . to cope with life, at work, harassment, not living at home."

Developing a "taste." Through different experiences, students in vocational education classes get a "taste" of roles and responsibilities, generally through simulation and practice. They developed an understanding of the necessary skills for particular roles and the application of those skills to particular problems. A counselor described it as "getting a taste of the career area." To a graphics student, it was "to give kids an insight on what it's all about and try and teach them the basics of what to do and how it can be done."

Many of the experiences involved simulated experiences. In an auto mechanics class the instructor told a student that a mechanic in a shop "making thirty dollars an hour" wouldn't waste time cleaning spark plugs, "because people can't afford to pay" for the mechanic's time compared to the expense of replacement. In other classes, simulation involved the whole class becoming a functioning unit, such as an actual business office, a printing plant, or a food service outlet.

Although simulation was often used for providing a "taste" of a career, the process of learning job skills through practice and specialization was also

noticeable and often observed as a part of the simulation activities. Daily, during the course of our observations, classes of students were observed typing, printing, preparing and serving food, repairing engines, planning sales, etc. This ". . . opportunity to practice things that they're good at," gave students their "taste" of roles and responsibilities by having them "understand what you've got to do to make it work out right," while getting "experience in a field of work they might want to get into." One superintendent stated that through practicing skills, "they've learned something about what it takes to do a certain job." This knowledge, gained through an exposure to specific skills and opportunities allows students to practice and apply those skills. It also allows students to make critical choices and decide exactly what is good for them.

Students also thought that understanding the nature of work was a result of their exploratory experiences in vocational education. "It makes you understand more about working on jobs and everything," explained one student. Another student added, "It shows you what the real working world will be like."

A Different Perception

It is evident that vocational education is an exploratory process where students develop an understanding of career roles. It seems that students get the opportunity to actually experience role responsibilities, determining how compatible their skills are with the responsibilities of the job. However, for a number of students the important part of vocational education was not perceived as exploration, but as job preparation. One student said that there were students ". . . who might know what they're going to be going into." By having a clearer understanding of their career direction, vocational education for these students would not be exploratory, since they are past that stage in their immediate vocational development.

A principal said that different students have different needs and, therefore, vocational education should serve different purposes for various students. For some it's purely a course to explore. Others know ahead of time what they want to do.

It is possible that the existence of different perceptions among students of whether vocational education experiences are exploration or preparation is indeed a function of the students' level of vocational development and their contextual circumstances. For students who have very few options or students whose level of vocational development is especially high, vocational education in secondary schools may be perceived as preparation.

Postscript

> ***But it is still learning about yourself, and when you learn about yourself you will decide what you want to do, how far you want to go with it, and then you've got your tools you carry along with you. (Teacher)***

CHAPTER VIII

LEARNING TO WORK TOGETHER*

Learning to work with others is a skill we all utilize to some extent throughout our lives, occupationally and personally. In most occupations it is expected that individuals work together so that some product can be efficiently produced. In our personal and family lives, getting along with others is also an important skill. As we observed vocational education classes, we developed an appreciation and understanding of how learning to work together is an integral part of the vocational education classroom experience. There were times when the students encountered conflict or did not do their part and the entire process broke down; it all seemed to be part of learning. Efforts were made to get everyone back on track and the process continued.

Following are some observation notes from vocational education classrooms where students are having the experience of working together. The first observation is from a graphic arts class where students are working together to find the source of a noise on a press and repair it.

> John: "It's good." (Starts press.) "What's that noise?"
>
> Andy: (Oils press.) "It might need water."
>
> Scott: "It's at this end." (While Scott oils it John applies water to rollers. Scott sits on his chair while John cleans the blanket. John turns on press. Paper gets crumpled.)
>
> John: "It's hungry." (John turns off press. Jamie gets paper out. John and Jamie operate press. Scott and Andy watch.)
>
> Scott: "How's it lookin?"
>
> Jamie: "Washed out."

These students are attempting to solve a problem they are having with a machine by using their individual skills and expertise to suggest and try out possible solutions to the problem. A second example of students having opportunities to work together is from a consumer education class.

> Four students are making "frosty bars" to sell to the student body. The bars are put together in an assembly line fashion. The first person cuts the brownie pieces and hands two of

*Theme author was Linda Ernst

> them to the next person who cuts a slice of ice cream and puts it between the brownie pieces. The frosty bar is passed on to the third person who wraps it in waxed paper and hands it to the fourth person who stacks it on a tray which will eventually go into the freezer.

A vocational education director explained the importance of working together this way:

> It's not a place where they sit in their seat, you know, just related to books and paper, whatever. So I think that, in itself, is great learning--to be able to work with other people in a group. One of the things we are told by employers on our advisory group, if there is anything else that you can get these kids to understand, is the attitude about work and it's the ability to work with other people. . . . That's frequently the two reasons why people are losing their jobs.

A business and office education teacher provided this description of working together in the classroom:

> A big thing here is the work flow, being able to work in an office with each other. You'll find that sometimes we do have some problems. Some people don't do their work, and they're gone. Just like in a regular office there are some problems sometimes. . . . Meeting the deadline and trying to work as an organization. . . . I think if they can function and do that here and work with friends. . . . If they can function and work in this open office with their friends and do a good job, I think they'll make a good office worker.

The majority of time students spend in vocational education classes is time spent working with other students. What is the nature of this interaction among students? What form does it take and what are the learning outcomes for students?

As we began to look at the nature of this interaction on the part of students, we saw several things happening. First, we saw students learning to resolve conflicts and tensions. They were given the opportunity to work out disagreements and correct problems which interrupted the flow. Second, we saw students working towards deadlines. The time would come when the finished product needed to be completed. There was often a real hussle to meet the deadline. Teachers would often step back and allow students to adjust the pace or make arrangements to complete the project on time even when unforeseen obstacles developed. "Because," teachers would say, "this is what you'll experience on the job." Third, students were placed in situations where they had to work with differing kinds of people with differing skills and abilities. Skills and abilities of several students had to be synchronized to produce a final product. Fourth, students learned to both lead and follow. Opportunities were available for students to supervise and teach others, and to learn from others.

Resolve Tensions

Students in a simulated work situation take on positions which simulate those in the workplace. Students are office managers or payroll clerks in a model office class. Students are cash register operators or are in charge of the salad bar in a home economics class. These positions change regularly to give students the opportunity to try out several different positions. A student in a job must learn to respond appropriately to other students in related positions. Often problems arise; the harmony is disrupted. Tensions are created which simulate those of the workplace. For example, two students in a business and office education class encountered a conflict when one person's job could not be completed until the job of another was finished. Here is what the interaction sounded like:

Kathy: Nancy Anderson! Have payroll checks gone out get?

Nancy: They're not out because I haven't gotten to them.

Kathy: Then why don't you get to them so I can get the envelopes done and they can get out?

Nancy: Do you want this job? (Voice controlled and strained.)

Kathy: I'll do it if you can't handle it.

Nancy: I can do it if you just hold on.

These two students were normally friends but, according to Kathy, this incident caused a strain in their relationship which resulted in their not talking to each other for part of a week.

A "foreman" in an auto mechanics class who is the only female in the class tried to get the other students to clean up the garage at the end of the period. Some of the students were giving her a hard time and she proded and teased them into getting their jobs done.

Another student had a personality conflict with her boss on her work experience site and, as a result, she walked off the job. The teacher failed the student for the quarter, but gave her another chance at a job placement because the teacher knew the employer wasn't as cooperative as he could have been. The teacher, in this case, felt the student must learn she should not walk off a job but rather try to work out problems and gave her another chance. Students are encouraged to work out conflicts and tensions--to work with others, to cooperate. In fact, typically teachers would back off and let students work out conflicts on their own which would be typical of a regular job.

Students were able to identify the benefits which resulted from these opportunities to learn to work out conflicts in the class. When asked to indicate some of the most valuable things learned in the class some of the students' responses referred to the ability to work out conflicts. One student said, "I've learned you have to work together to solve problems." Another student had

learned, "To give help and learn to operate and function under sticky situations." Another student explained what she had learned.

> If you don't get along with someone there, I kind of learned that there's different ways you can handle that person. You can try to get along with him or you can just stay away from them.

Meeting Deadlines

Deadlines are a big part of the work world and are also an integral part of vocational education classes. In graphic arts classes, students needed to finish graduation announcements prior to high school graduation. In a occupational home economics class students needed to finish preparing the meal by the time customers begin to line up for the noon rush. In business and office education classes deadlines were artificially established so that students could develop a feel for deadlines which they will experience on the job. Students were forced to work together so the job or product could be completed on time. Everyone must do his or her share to meet the deadline.

Students working in groups in a distributive education class were trying to complete a window display. Here is a conversation between the teacher and a student:

> Teacher: Remember, the windows are due at the end of the day.
>
> Edward: What happens if we don't get it done?
>
> Teacher: Then your grade will suffer. It's just like a window at (a local department store). You only have it so long and then it's gone. We just have our window so long.

Students had been absent which meant there were always members of the crew missing and the project was difficult to complete. The teacher did not make allowances, however. The students who were there were expected to work on the project as best they could. Students also made arrangements to work on the project during free time during the day and after school.

The length of the class period places constraints on time which also forces students to work together to complete a project before the bell rings. We often saw real cooperation taking place during the clean up time, especially if time was short and students needed to get on to other activities or classes. There was often real teamwork taking place as students were able to achieve an effective combination of activities to get everything put away and cleaned up before the bell rang. One student held the dust pan for another student who was sweeping the floor at the end of an auto mechanics class. In a home economics class students who had finished their clean-up jobs helped those who were not finished so that everyone could leave when the bell rang.

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Appreciation for Individual Differences

The ability to work with different kinds of people is part of what happens as students learn to work together. Students learn that the more capable students need to help the less capable, they learn to help each other in mutual kinds of relationships.

Students learned to be accepting of all students and, in some cases, this also means taking students under their wing and helping them. A teacher's aid in a business and office education class explained how students need to learn to be accepting of other students who have special needs.

> (A teacher) had the case where we went on the field trip and when they were trying to figure out rooming and stuff--a lot of these kids, they either aren't asked to be in or they are kind of left out when it gets down to the end or in some cases students have said that they don't want to room with someone and how do you handle stuff like that. So what (the teacher) has done in a couple of cases with that is had me work with a student with special needs or something and she will talk with the class and set them straight. Some of the things are things that they need to be set straight on and in many cases they have been pretty understanding though. They want to know why does Julie have these seizures, what the problem is, so (the teacher) because, for medical occupations class, it's a perfect example for those kids for understanding what someone has to live with and that type of thing, so she tries to give as much encouragement and that type of thing. She'll get after them once in a while if they get kind of snippy about who they want to be with and that kind of thing. That's good for them.

Michael, a special needs student, who was in the business and office education class was accepted and supported by other students in the class. The results were beneficial to all the students, included Michael. Here is how one student responded to a researcher who asked if students in the class were treated pretty much the same:

> Yes, well there's Michael, the guy that's in our class. He probably gets a little extra attention because he's a little slow. Like sometimes he forgets things, so you've got to tell him, explain things more thoroughly to him. Everybody helps him out pretty much.

The aide in the class agreed that Michael had been accepted by the students. However, she also said special needs students were not always accepted this way.

> That has been great for Michael, there. That is good to see, but with some kids, and I think that's a difference, too, in this social acceptability type of thing. Some of these kids, I don't know what it is, but some of them are much more

> socially accepted than others and there have been other cases where kids actually flatly refuse to be with kids. They'll put them on the spot that way and where it's been real touchy both for the teacher and for us in terms of working with them and stuff.

Because there are often special needs students in vocational education classes, students have the opportunity to learn to be accepting and helpful to students who are less capable. There was evidence of students benefitting and learning from this experience. One student said one of the most valuable things she had learned in the class was, "Working with people--also helping people with work they can't do."

Learning to Lead and to Follow

Students also educate each other in vocational education classes. This was especially evident in business and office education classes. Students teach other students as well as learn from other students. Again, this is typical of what they might experience in the work place.

Students in a business and office education class rotated jobs every few weeks in order to learn the various responsibilities in a typical office. One student explains,

> Ya. Okay, when we first got here and the first machines, he set us up with a book, not a book but like a pamphlet, manual, whatever. And then you read that and it showed you basically how to do the machine and then (the teacher) went around and he showed you, like if you had any problems. And then after the first two weeks were up, we got new machines, and then the people that worked on the old machines would show the new people how to work on those. And if they had any questions they would ask (the teacher) or the people that worked on the machines before them. And so in that way, you know, you can understand it.

Sometimes students are rotated on jobs in a way which gives students opportunities to both lead and follow. The business and office education classes typically followed this procedure. Students would apply for jobs. These jobs had varying degrees of responsibility and supervision. Here is a description of one student's job as she supervised staff:

> I have this book right here and it has some of the answers and stuff in it and I can just look at it. If their total is wrong then I just circle the total and they have to do the column over. They have to find their mistakes themselves otherwise it wastes too much of my time.

In other classes it was sometimes difficult to determine how leadership roles were established. Students were usually divided into groups and leadership often developed informally within the group. We might assume that those students with already established leadership skills take on this role. Or we

might assume it is those students who have needed skills and abilities who take on this role. Here is an example from one observer's notes of two students working together on a press in a graphic arts class. Jerry is obviously the leader and Rodney is obviously the follower.

> As they set outfeed adjustments, they have trouble. Jerry: "Oh no, not today." Rodney: "You want me to get the Allen wrenches?" "No, I'm not gonna mess with it that much today." Jerry does the work, while Rodney acts as gopher and assistant. Jerry rejects Rodney's suggestions again for "allens" or "steel" and decides, "I'm just gonna run it under some water." Jerry goes up front to sink. Rodney turns on press adjacent and then turns it off and follows Jerry to front where he washes hands. Jerry returns and Rodney follows. Jerry works on press attachment while Rodney looks at printed materials next to him. Jerry replaces part on press. Rodney stands next to him and watches.

One researcher asked a student in an agriculture class who he thought usually ended up the leader. The student responded, "Well, the one that knows mostly, knows most about it."

One student, responding to a question about the most valuable things learned in the class said, "How to be a leader and think." Another student responded, "How to follow directions." These students are aware of the outcomes which result from opportunities to lead and follow provided in the class.

Postscript

> ***A big thing here is the work flow, being able to work in an office with each other. You'll find that sometimes we do have some problems. Some people don't do their work, and they're gone. Just like in a regular office there are some problems sometimes. . . . Meeting the deadline and trying to work as an organization. . . . I think if they can function and do that here and work with friends. . . . If they can function and work in this open office with their friends and do a good job, I think they'll make a good office worker. (Teacher)***

CHAPTER IX

EXPRESSING SELF*

Eisner (1979) suggests that any educational experience becomes "aesthetic" when enjoyment of the experience itself is the reward. Rather than focusing upon the desired end of an experience, a person becomes emotionally involved in the immediacy of the process. Although work in vocational classes often is instrumental toward specific goals, we found that students experience aesthetic pleasures as well. Certainly, the following comment by an agriculture student reflects such captivating involvement in FFA (Future Farmers of America).

> Then I went to (FFA) camp and it just took me away. The officers . . . make you understand this is important, and it just swept me away, and I said, "(An agriculture teacher) is what I want to be." . . . And the first time I went to national convention, I was just taken away again. I wasn't there 10 minutes and the energy of the room just inspired me.

Perhaps the setting and content of vocational education provide colorful contrast to those of the fine arts, and these characteristics may prevent us from placing vocational education within an aesthetic domain. The noise level might grow loud with the sounds of equipment, the costume is likely to be of denim, and the language is occasionally rough. But in at least one way vocational classrooms are perfectly congruent to a refined art gallery. A pulse of expressiveness can be readily identified in both settings.

This section will discuss the expressive forms that we encountered. Emotional verbalizations, physical expressiveness, concrete production, and creativity attested to student involvement in various ways and contributed to general pride. After discussing these types of student expression, two roles of creator and critic will be related to expressive activity in vocational education.

A Channel for Emotion

The expression of emotion highlighted many of our observations, providing a human quality to the most technical subject areas. Humorous interchanges and joking were particularly noticeable. Perhaps reflecting the family-like comfort that students perceive, this shared humor seemed to "naturally" flow from the everyday workings of class. The following observation of an occupational foods class reflects the teacher's willingness to joke about herself and to share this with students:

> A student jumps off a cart on wheels. The cart swings back and rolls onto the teacher's foot. The student says, "Did I run over your foot?" The teacher replies, "Yes, over my

*Theme author was Marsha Rehm.

'worstest' corn." A male says, "You got corns?" The teacher says, "Yes, I'm a true blue foods teacher."

Another observation from a family life class shows that students themselves easily combine humor with class learning. The class is discussing how parents try to socialize their children.

> Teacher: "Think a minute on what is the most effective (form of discipline)."
> Bill: "Privileges."
> Teacher: "Privileges?"
> Bill: "Ya. That really worked, even when I was five. No candy for a week. That really blows your mind away."
> Everyone laughs.

Emotion did not always have a pleasant or fun valence, however. We also saw portrayals of anger and frustration. For example, we heard a student in an office education class state loudly, "Why are we getting all these letters back. God, like I'm going to do them all over!" After another student commented, "I like your positive attitude," the distraught student answered by slamming a drawer at her desk. We also saw nervousness as a young man, redrawing some lines on a graphics project, admitted that his hand was shaking because of a previous mistake. Boredom seemed to creep in as a few students slept through a lecture or film. We even witnessed tears and sniffling as family life students watched a videotape about a mother who was reunited with her daughter after "giving her away" years ago.

Perhaps it is a function of an open structure and a general comfort level, but physical behavior expressed various emotional qualities between students. Teasing, concern, and affection were displayed in overt ways. A brief and casual scene in an auto mechanics class reflects liking between students.

> Two students come in late with a pass. One puts his arm around Mary as he goes past her. She just pats him on the back and smiles at him.

We saw a girl hug every individual in family life class (including the observer) after another student had written "Love is a hug from a friend" as part of his assignment. An emotion of anger occasionally took a drastic physical form. For example, we watched a student angrily destroy an old U-joint with a hammer.

Concern was physically manifest between teachers and students as well as between students. We saw several teachers place their hands on students' shoulders in an effort to ease nervousness about a test or assignment. We observed other teachers jabbing students in the arm affectionately.

Given these unique and isolated instances, can anything of value be concluded about emotion in vocational classes? Certainly, the dwellers within feel comfortable and free enough to verbally and physically express their emotions. But a more important implication is that the expression often stemmed directly from a classroom task. Regardless of whether the immediate content

relates to technical auto repair or to abstract family life topics, students find emotional meaning in what they are doing. Let's now look further into what might stimulate this emotional involvement.

Participation, Pride, and Achievement

Expression of student opinion often emerged from participation in class discussion. When asked how classes compared or related to other courses, students often indicated that the opportunity to contribute ideas to class boosted their confidence or piqued their interest in the subject. The following examples were provided by students in a family life class:

> I think I'm getting to where I can discuss more openly in class than I ever was. It's kind of helping me to talk more freely.
>
> There's more discussion. Sometimes we really get into it . . . and you express your views. Some people are different. They have their views and sometimes they get mad. It's different than any other class I've taken.

Our direct observations in family life classes supported these reflections. The topic of adoption prompted one student to reveal, "For me it was positive to find my natural mother." Another student participated in a discussion of sibling relationships by stating, "I used to beat my little brother up. . . . I wanted to be the baby." Further discussion was prompted as a second student stated a similar experience: "I guess I was real mean when my brother was born. I was five at the time."

Although one might expect freedom to express opinion in family life classes, students felt it was a vital component of other courses as well. One student seemed confident of the impact that student opinion had on the evolution of a new agriculture class.

> (The teacher at an FFA meeting said), "What kind of classes should we have?" And we brought up a few things--a computers class and a small hobby farm class. They tried them out to see how they worked and apparently the computers class is working all right. We're going to expand next year, hopefully. . . . That's how the class got started. See, we had ag numbers down and we had to figure out, "What can we offer to someone else that nobody else would have the chance to get?"

Not only does the statement reflect active participation, but it also implies that feelings of pride stem from personal involvement. In fact, we observed many subtle indicators of pride. A student adding a nose to a "bunny cake" for an occupational foods class said to another, "Ain't that sweet?" Another student signed his name in frosting on the bottom of his cake. And an agricultural mechanics student told the observer, after a stubborn tractor was finally started, "We really did something today . . . ought to be put on the calendar."

While these observations seem simple and sweet, we might hypothesize that pride in one's work generates deeper effects. Perhaps pride not only stems from, but also motivates, achievement in developing and polishing skills and talents. The adults we interviewed thought that unlimited types of achievements were indeed possible through vocational education. Several counselors mentioned that this outcome was a fundamental purpose of vocational options.

> Using our ag program as an example, many of those kids go far beyond their expectations of what they're able to do. So a good program will challenge kids, will lead them to new achievements they haven't done, and will increase their self concept.

> Promptness, reliability, dependability, creativity, following directions, broadening their ideas. . . . Most of the classes I think have a career feel to them, some possibilities for what you could do if you wanted more of a particular type of a subject.

But we must go to the students themselves for "hard evidence" that these counselor ideals become reality. The following comment reflects a student's confidence in his past and future accomplishments in printing class:

> Well, one thing I wanted to get out of the class was a knowledge of graphics, which I got. What I'm doing now is just trying to polish my knowledge and get more as I go along.

Although technical and "lower" knowledge levels of learning are sometimes associated with vocational content, we found some interesting contrasts to this stereotype. Creative production seems to be an outcome when students gain the "building blocks" of technical expertise. Like the artistic product, a vocational product allows the creator to make statements about personal ideas and talents. Several students in food service made this exact analogy between art and their subject.

> You've got to work with it and this is your creation. It's a lot like art. It's not a piece of art, but it's a lot of fun. I just love it. You just get right in there and do your own thing. People enjoy it.

> It teaches you the fine art of cooking. I think this class is unique because . . . we actually serve teachers. We make our own products and everything.

Creativity takes different shapes in other types of classes. We noticed several students turn technical knowledge into computer programs. We heard teachers reminisce about students who had unfolded sales or marketing talents in business courses and related organizations--and then later transplanted these skills into successful careers.

Thus, creativity can take technical, social, or artistic forms in vocational education. Although our data does not predict how frequently such feats

are accomplished or how outstanding these creations really are, manifestation of skill definitely is a source of student pride. Hopefully, both great and small creative accomplishments in vocational education become levers toward student development.

Because both emotional and tangible expression is dependent on an active "relationship" between the expressor and object of expression, the theme will be developed along one more dimension. Whether they are dealing with food products or automobiles, vocational education students not only express their skills, but they also think about what they are doing.

Becoming Creators and Critics

Eisner (1982) suggests that students learn by becoming both "makers" and "critics" of their classroom experience. We've already seen that emotions, materials, and ideas are expressed by vocational education students in the role of maker. By learning to appreciate quality and to judge lack of quality, a student practices the equally important role of critical thinker. A student in a graphic arts class summed up an interweaving of these roles by acting as critic of the work he produced.

> It's more or less work you want to do. You know there's always a purpose to what you're doing. Either you're putting something out for yourself or you're putting something out for someone else. There's always a purpose to do the best you can, not to just look at certain things but to do the best job overall. . . . If you're doing something for someone else, you don't want to do a crummy job. I make everything I do as if I was making it for myself. . . . Everybody just wants to do it for themselves and for the instructor and for the other person. Just to make everybody happy. . . . You walk around and you can just look at what they're doing and notice that they're trying to get it as precise as they can.

Because this student noticed the work done by classmates, appreciation for quality might also be developed by observing the methods and outcomes of others. Another student appreciated the award-winners from a competition related to a business and office class.

> (A student) asked me (the observer) if I had time to look at some pictures. They were pictures of students at a (business organization) contest which had been held last weekend. He points out who won special awards in the pictures. One picture had three girls with flat top hats on. He said they did this for his benefit because he wears a flat top hat.

Although such instances are not unique to vocational education, they indicate that expression on a personal and group level contributes a vital aspect to these courses. Stereotyped notions that students are merely trained in instrumental "how to's" perhaps cloak the expressive potential that is stored within vocational education.

Postscript

I think I'm getting to where I can discuss more openly in class than I ever was. It's kind of helping me to talk more freely.

CHAPTER X

EXTENDING SELF TO THE COMMUNITY*

Vocational education offers students the opportunity to become experienced in the production of goods and services for the community. We observed students practice the roles and techniques of food service as they produced meals for a school-based restaurant. Students learned principles of auto mechanics as they repaired a variety of vehicles. Perhaps it is because many outcomes from such experiences are concrete or noticeable that vocational education classes become useful to others outside as well as those within the classroom.

Because service to the community depends on the nature of the subject and the course structure, this theme was prevalent in some courses and absent in others. This chapter first will explore the primary recipients of services provided by vocational education--the community, school, and individual students. Both the potential value and possible hidden dangers of service experience will be considered.

Who Gets Served?

Food service, printing and graphics, and auto mechanics were the major service providing classes in our study but these were characterized by different goals, processes, and outcomes. In fact, we found that the types of services were so diverse that it was difficult to categorize them. Because the services of vocational education are multifaceted, a variety of groups benefit. Let's first look at how communities benefit from certain vocational education specialties.

The local community. Vocational education students sometimes are given simulated or actual work experience where they learn the standards and norms associated with these roles. A vocational education director thought students provided a general service to his town in the form of a knowledgeable, dependable employee pool.

> There are times when I think of the fast food industry. They would not be able to stay in business were it not for the kids (in "on-the-job" programs) who come to work on the noon hour. . . . I think of it as being a productive citizen and making a contribution to the employment team, providing workers for the industries and businesses around town, hopefully providing one or two somewhat stable employees.

In fact, people involved with vocational education actively strive to meet community needs. A counselor noted,

*Theme author was Marsha Rehm.

> There is a very formal procedure in our school district for representatives of the community to serve on vocational committees. The boards meet frequently and we ask for industry's input. What do they need to know? What changes do we need to make?

While this comment mirrors a common belief that business and industry sectors are most often served by vocational education, charitable and social groups seem to benefit as well. A food service class occasionally prepared low cost meals so a charitable group could then distribute the food to the needy; various social groups like garden clubs occasionally held luncheons in the school restaurant. A printing class also made brochures or posters for local nonprofit organizations.

Even vocational education classes that do not directly provide student workers or concrete products serve the community in a broad sense. For example, home economics and agriculture were expected to help future families and farmers of a community.

The school. In addition to benefitting certain community activities, vocational education contributes more directly and more frequently to school well-being. The following students' comments illustrate the wide range of school functions performed:

> We do the printing for the school . . . programs, buttons, and tickets. We basically run off all kinds of stuff for the school and other classes.

> Yesterday the North Central people were here for two days and we fed them on both days. They came to the restaurant. It was pretty fancy and everything. . . . It was hard work, but we accomplished that.

> If someone gets a flat tire in the parking lot, they can bring their car down here. . . . I remember a time when I just came to the school and my brother had a flat. The teacher let us come in just before he was leaving. He took off the tire, changed it, and patched it.

Perhaps because teachers spend their careers in schools, they are especially sensitive to school-based needs. Teachers are often more willing to serve their home school than the general community needs. A graphic arts teacher stated,

> (We get demands) from anybody that wants printing cheap, basically the school and nonprofit groups. A nonprofit organization called me this morning and I said, "Sorry, I'm not taking any other printing for the rest of the school year. Right now I have so many demands with the school itself and that comes first." I made it the priority, and the principal wants me to make the priority. School's first, and that's the way it should be.

Some vocational education teachers like the auto mechanics teacher who regularly opened his classroom after regular school hours go the "extra mile" to help students, handle requests of people to fix their car problems, and generally publicize the program.

However, teachers don't always initiate an extra service. Schools sometimes place expectations on vocational education classes to fulfill particular roles. For example, graduation announcements traditionallly were produced by a printing class. It, likewise, was assumed that a car problem of a student, teacher, or administrator could be fixed in auto mechanics.

The fact that vocational education has utility for both community and school organizations perhaps increases its value as a discipline in high school programs. But what about the students? Are they individually served as they devote time and energy to fulfill these external requests?

The individual student. Students in all types of classes were overwhelmingly enthusiastic about the services they provide. They implied that in serving others, they were serving themselves by gaining valuable knowledge and experience.

> Teachers know that they can go down if they need their car fixed. I think they think the class is good. Kids learn from the place.

> The purpose of this class is . . . working with other people to get something done, like a whole family working at a restaurant. You learn how to cook, make up your own recipes, add a little of this and that for your taste buds, and say, "Hey, this will be good and they'll like it." Then you serve your teachers, and it's just like serving other customers. It's really good experience.

Although students feel positive about their work, we must remember they are newcomers to the practice and they are naive about the full consequences of their activities. This raises a controversial question concerning their service experiences: Do students learn to master techniques and processes that will later help them to master their own lives? Or, in meeting the demands of others, do they simply learn to uncritically accept servitude? Let's first look at reasons why the service orientation might provide more positive outcomes.

Fair Exchanges for Service

We found that provision of goods and services for others tended to engender many rewards when there was a fair exchange for services given. One simple but important reward was the resulting self-satisfaction and enjoyment. Students proudly vocalized their feelings about service experiences.

> (Food service) is fun and educational. You learn a lot. You eat a lot. I like it. You get to learn a lot of stuff you didn't know before, like how much to put in and what amounts to what. . . . Getting to know your meal is on and people like it.

> The purpose of this class is to teach you about graphics first. After you learn about it, you just naturally put out quality work.
>
> Lots of the students around here ask me why I'm always carrying stuff with me. They know we do a lot of buttons and a lot of work in here. . . . I tell them it's a print shop and we print a lot of stuff for coming events. It's fun.

Although it is difficult to predict how such feelings will affect future self-development, they produce at least momentary satisfaction and perhaps long range confidence. This intangible but real exchange for service is valued by students.

Others' appreciation. When others recognize student accomplishments, another important type of intangible "payment" for services is made. Students greatly appreciated compliments on the quality of their output.

> A lot of times after teachers have been served (in a food service restaurant), you go to a few teachers' classes. They'll tell you how they really enjoyed it. They ask how it's put together and how we like doing it.
>
> I've always perceived a good feeling, because teachers can usually come down here and get work done. It's pretty good quality work for students, without having to go out to some print shop and have it cost a fortune. When my choir teacher found out I was in graphics, he asked me to start doing some stuff at concert times and programs and all of that. And he's come back every concert now. He's always talked to me about it, and he's been talking with teachers about it too.

One of our observations in a food service class even provided a scene replete with extraordinary appreciation. After students had prepared chili so a charitable organization could feed the hungry, the group members revisited the class to display their gratitude. They presented the class with a decorated cake with a "thank you" label, pictures were taken, and the principal was invited as a guest. The leader presented a framed certificate of appreciation as she commended the class for "invaluable" help with a "humanitarian project."

Although most appreciations were not this extravagant, any quick "thank you" or compliment seemed to make the service more worthwhile and enjoyable.

Learning the realities of service occupations. Students use a variety of skills in a great variety of tasks. We saw them perform simple and dull necessities such as cleaning, and we saw them successfully meet difficult demands to produce high-quality production work for an entire school. Students told us that they had learned a wide range of knowledge and skills necessary to specific services.

> I've done everything you can do. Worked on presses, worked on typesetter, did stripping. The one thing I didn't do is screenprinting, because it's no big deal for me.

Because most teachers structured classes so that students rotated jobs, they were able to practice a wide range of tasks from different perspectives. Such first-hand knowledge probably could not be better learned in any other way, attesting to the educational value of service productions at school.

We sometimes were amazed that students so willingly performed the necessary, but extremely repetitive, tasks connected with these services. Although food service workers spend tedious hours chopping food and cleaning their restaurant, direct experience with these realities might help students decide how well-suited they are to similar work. Perhaps the more challenging and creative aspects of the service outweigh the mundane ones.

When students are given the opportunity to take part in decision making, they gain advantages of "ownership" in the service and extending their understanding of management levels. A student highlighted a "thinking" component in the food service process.

> We started something new this year. Actually the students are coming up with all the ideas for the menus and the plans and everything else. We write our ideas down and we submit the menus to the teacher.

Because not all students were given the opportunity to contribute to class decision making, this student was fortunate. Although teachers usually assigned tasks so students become well-rounded in various jobs, this rotation was sometimes confined to the "lowest" levels of task performance. Certainly these basic skills are fundamental to comprehensive understanding of a business operation, but important knowledge is lost when service experience does not offer critical thinking opportunities to all students. Although personal satisfaction, recognition, and realistic learning experiences are important rewards for students who provide a service, perhaps these are not enough.

Serving a Master or Master of Self?

In service of the service? Sometimes a service itself becomes so integral to a vocational education program that the task to fulfill its demands becomes a problematic, but powerful, guiding principle. We found evidence that a well-known service can become the defining structure for what students do in class. Students told us,

> Most of the time you're cooking and serving people. You do a lot of cleaning.

> Right now we're into graduation announcements and that's a busier time. Usually people work on their own projects, plus things for the production work.

These statements imply that constant demands to meet obligations might become powerful principles that guide student learning activities. Perhaps students could better use the time to gain conceptual depth rather than task practice with repetitive activities.

Of course task repetition might be necessary to achieve the essential ingredient. All teachers felt it was important that students understand the meaning of quality in resulting work. A graphic arts teacher was very aware of what was "good enough," and he taught students to reject poor quality.

> One job got backed up wrong and one job just wasn't good enough. We canned it. Now we are redoing any names we think are bad, aren't good enough to go out. That's what (a student) is stripping right now.

Because one student told us that the graphic arts class had taught him to put out "quality work," this teacher was apparently successful. Learning standards is part of any vocation, but vocational educators might further consider how they teach the concept of quality. Do students simply learn to meet standards or do they learn how the standards "fit into" the economic, personal, and ethical aspects of a service occupation?

Unfortunately, expectations for a high quality service also potentially lead to so much teacher direction that students don't get a chance to make complex decisions. Although we observed many students struggling to figure out problems on their own and contributing ideas for service improvements, we also saw teachers specifically telling students what to do on specific tasks and when to do them. Some students expressly desired more opportunity for self-direction.

> I think this class is kind of like a business . . . because we get jobs from all over the place. I think it would make it a lot more fun and make it more like a business if we could talk to people that want us to work for them. That might turn some people away because they are talking to kids, but I think it would be kind of neat if we would see and talk to them . . . then figure out how much it is going to cost and how much time it's going to take. That would be something like a learning center like in junior high and elementary school. We used to have a business place. One person would be the cook, one person would be the cashier, we'd have a manager, assistant manager, and all this kind of stuff.

A certain amount of technical knowledge and maturity are prerequisite to successful "management" decisions. Students might make mistakes, and the time needed for student trial-and-error might extend beyond the time needed to complete a job.

Should secondary vocational education programs produce quality services primarily as a result of skillful teacher management? Or, should students be allowed to become more involved in at least some major executive decisions, even with the probability that a few mistakes will be made because of their inexperience? There is probably a trade-off. We must ask which is most important at given times throughout a student's duration in vocational education. If we neglect to do this, students might pass through vocational education with technical proficiency and eagerness to serve--but without a sense of the complex problems and decisions involved in business.

Critical or naive service? Certainly not all students have the ability or desire to become managers or highly skilled workers in a given situation. But many students seem to have the naive idea that certain basic skills comprise the total workings of the service. Not only do they sometimes lack a critical knowledge of the complex processes involved in service, but they rarely consider the status of the service within the social structure. Let's take the following statement from a student in business education:

> I'll probably have a good job in 5 years. I'd like to be a legal secretary . . . not like working in a big office but like having my own office. Working for one guy and typing up his letters and stuff.

Although the student goes on to say that legal secretarial work will "offer more" than regular secretarial work, it is interesting how easily she accepts the idea of serving "one guy." While the student obviously hopes for a good paying career that meets her interests, we must ask if she was explicitly encouraged to consider the career of legal secretary from varied perspectives. Was she unintentionally led to believe that typing up someone's letters represents the job because this was the technique she most often practiced? Or was she given additional information on responsibilities, drawbacks, and advancement potentials involved with the specialized skills of her chosen career track? These questions are impossible to answer from a brief student statement, but they offer intriguing practical and research challenges to vocational education.

Postscript

> ***I've always perceived a good feeling, because teachers can usually come down here and get work done. It's pretty good quality work for students, without having to go out to some print shop and have it cost a fortune. (Student)***

CHAPTER XI

GOING ON STAGE WITH LIFE ROLES*

When one goes to a live performance--whether it is a high school play, a city orchestra performance, or a basketball game--there's an air of anticipation prior to the curtain going up, the baton being raised, or the players running onto the court. The air is charged with expectations. Both the audience and performers have anticipations and expectations.

The audience members' expectations seem to vary with the type of performance and with their relation to those performing. For example, some might come hoping to be entertained; others might come thinking they'll gain some insight or greater appreciation; and others come expecting that their friends or family members will demonstrate their talents to others and will experience a personal sense of accomplishment.

The performers' expectations vary, also. They might expect to entertain or enlighten audience members, to reveal and call attention to their talents, to make their friends and family proud of them, to receive recognition, and/or to enjoy themselves. These expectations serve as motivators; when met, they provide rewards.

The theme of "going on stage" is used here to capture the essence of some of the vocational education classes we observed, especially the classes which involved students in the actual or simulated production of goods and/or services to the public. In these classrooms, not only did we sense the anticipation prior to performance, but we also observed what went on prior to performance and what it's like learning to be on stage.

Prior to Performance

Casting the roles. What happens during an early stage of any production is the casting of actors into specified roles. In a vocational education class, this involves deciding what roles need filling, who will fill them and for how long, and if and how roles will be recast.

The roles to be filled depend on the goods and services being produced. For example, in the food service class, roles included dish washer, server, waiter/waitress, cook, cashier, and so on. A student in a business education class itemized the roles in her class.

> You've got the mail clerk, you've got three statistical clerks, and then you've got your four typists, and then you've got a banker, and you've got two people that work on designing the newspaper and stuff. You've got your accountant, and you've got payroll clerk, and you've got file clerk.

*Theme author was Jane Plihal.

Teachers seem to want students to have experience at most or all of the roles. However, although rotation of roles was the general practice, when a production deadline was pressing or a job was especially demanding, some teachers made casting decisions by finding optimum matches between role requirements and worker qualifications. A graphic arts teacher said,

> If it is a rough printing job, then I will give the job to a kid that has had the more experience. I try to gear the job to the level of the student that I'm giving the job to. If the job needs to get out and I know it has to get done, I'll give it to the student that can do it. . . . They can do problem solving and get it going correctly before having to come and get me.

And a business education teacher explained,

> If they have accounting experience, they can go and close out the books. If they don't have any accounting, then I don't have them do it. If they don't have an accounting background and they don't know a debit from a credit, it's kind of worthless to have them close out the books and everything else. I think it's kind of a waste of time. So I always search the record to see if they have taken accounting in school. They are the ones that would get first preference. . . . If they don't have any accounting, they're kind of used as an accounts payable clerk or accounts receivable clerk where they just put entries in the book and record those. They wouldn't do any closing out at the end of the month.

Vocational education classrooms don't have understudies or bench warmers, but sometimes recasting occurs so that voids created by absent students can be filled and the production can continue. In the food service class where students worked in groups on specified tasks, one day a student told the teacher that of the four servers scheduled for the next day's lunch, only he and another one would be there. This remark stimulated comments by other students about problems with certain groups because some students often were absent. The teacher asked the students what they would propose as solutions, and they decided to recast the groups.

"Stars" weren't especially obvious in the vocational education classrooms. They did emerge, however, in two ways. First, as mentioned previously, when time was short for meeting a deadline and/or expertness in completing a task was considered important, certain students tended to be assigned certain production roles. Second, some students were given responsibility beyond that usually assigned to a role. For example, in one of the business education classes, one of the students was repeatedly asked to undertake tasks (e.g., proofreading letters) which others in the secretarial role weren't asked to assume.

Rehearsing the lines. Regardless of the type of work role we assume, we need to learn the lines for the role--that is, learn how to perform it. Other sections in this report, especially the sections on applied learning and technical learning, document the process of learning one's lines in order to perform

vocational roles. However, because the rehearsing of lines is an integral aspect of going on stage, it is appropriate to include illustrations of it here.

Since we observed classrooms towards the end of the school year, for the most part students had gone through the initial process of developing knowledge and skills for various work roles. Perhaps with a few exceptions, all of the students in the production-oriented classes had taken previous courses which focused on these fundamental understandings and skills. A student recalled,

> Well, at first you have to take a year of his class of like working on different machines such as typing, the key punch, the dictaphones. Things like that. Adding machines and stuff like that . . . he (the teacher) works with you as the skills go on. He tries to get to work with the individual and then the next year you go on the job and stuff. Get out of school and go to work.

The following excerpt from an interview of a student in a business education class illustrates what's involved in learning the lines of a head typist:

> He hands me all the new correspondence. I get a folder full of letters during the week, and I hand them out to each of the typists. And we have to type letters to each company with the envelopes and the invoices, put them together, and we put them in his correspondence. Then he sends them back to us if they're okay, signed, and then we send them to a file clerk. If they aren't okay, then we have to correct them and send them back until they do get okayed.

Not unlike many actual workplaces, students sometimes learn only their own lines. When this happens and they don't understand what others are doing or how their part fits into the whole, sometimes cues are missed and production problems arise. The graphic arts teacher talked about such a case.

> Well, I wasn't here to look at the problem, try to solve the problem. You see the kid didn't know what the problem was and obviously he wouldn't know what the problem was because he didn't strip it. The stripper didn't know what the problem was because the pressman . . . thought we were running the size paper that we stripped for. But what happened is (the student) gave her the copy that we printed last year and stripped it up for that sheet size. Well, in effect we were running it on a little larger sheet of paper which I grabbed off the shelf. It was paper that I had off the shelf.

A student in the food service class emphasized the importance of being knowledgeable of and attentive to the lines of others.

> It does not take a lot of teamwork. . . . Like let's say I have something on the stove and somebody else has something, and if nobody else would've told me I would just let it burn. And like if you're on dishwashing and something's hot and

> nobody tells you, you're eventually gonna burn yourself. And you just have to have a lot of communication going on, teamwork, mostly teamwork. It's like basketball players when they're on the court. They need communication and teamwork, and that's what we need in there. . . . Everybody knows what's got to be done.

Directing. The teacher's personality, the particular knowledge or skill being developed, the maturity of the students, and the desired learning goal all affect the teacher's directing style.

Sometimes teachers believe that it is necessary to be a task master so that all students learn to master (as defined by the teacher) certain tasks.

> And cleanliness while they work. And keeping their area clean and keeping their machine clean. You have to teach it. Many kids don't do that normally. They just don't do it and you have to teach it. You have to work on it. You have to constantly work with the kids to keep their working areas clean. And good work habits have to be taught. Not all the kids have good work habits. They have to be taught. You have to constantly be on them.

Teachers of advanced classes tend to adopt a more laissez faire attitude toward directing--an attitude which gives considerable responsibility to students.

> I believe you take it slow and easy. You train students to handle that stuff. And you give them the responsibility. And you're an advisor. You're a teacher. You don't do it for them. Some people feel that you have to do everything for them. And I've gotten to the point in my developmental stage that I teach them, show them how to do it, and let them run with the ball and just kind of coordinate things from that point on.

> I see my role here is to be very laid back and let them make the choices. These are advanced students, students that have gone through all the basics. So in this fourth and fifth hour, I like to take a secondary role and let them pass or fail on their own. Let them see . . . if it works out, how it works out. Is it satisfactory to their kind of thing? And also let them fail as well. Indeed, not if it's going to cause harm to anybody else, but I like to take a secondary role and let them make the choices.

The Performance: "The Real Thing"

Over and over, students described vocational education classes as being like "the real thing."

> It's like you're really working in an office. Because, you

> know, everybody's working and (the teacher) is the boss. I like this class better. You can get up and walk and do whatever. . . . I like it because you get the feeling that you are really working in an office, with all these other secretaries around you. And they're doing their job and you're doing yours. So it's pretty neat.
>
> You have your own job. You can get up and walk around without being yelled at.
>
> I think that this class is one of the most important classes that we have in our school because whoever wants to be a secretary could. They could see what it's like being a secretary. You've got deadlines to meet.
>
> It's just like a printing shop. You do all different sorts of steps before you put it on the sheet of paper, before you get the printed copy.

Teachers also think that students experience "the real thing" in their vocational classes. One teacher said,

> I try to . . . let them become independent, doing their things on their own and letting them see the results of their independence, too, as well. Be it good or be it bad. But giving them that freedom as if I were an employer and would you get paid for that kind of activity. "What you've done in the last 2 hours--would an employer pay you?" And I often ask them those questions at the end of the hour. . . . I try to let them realize that an employer is going to expect productivity.

Implicit in students' perceptions of these classrooms as "the real thing" are certain expectations and beliefs about characteristics of the workplace--of what it's like to actually be on stage. One expectation is that although there is a boss who oversees the operation (interestingly, none of the students in this study talked about themselves as being the boss), the workers have considerable independence, freedom, and respect--the kind which is thought by adolescents to accompany adulthood. Another expectation is that each worker performs his or her role in cooperation with others. If students perceived any qualities of "the real thing" to be negative (for example, exploitation of workers, boredom with unchallenging tasks, competition among workers), they didn't mention them. However, our observations indicate that students don't experience an ideal stage. They experience what it's like to get "pelted with tomatoes" as well as to be "presented with bouquets." These experiences are part of the performance on stage--part of demonstrating skills before an audience.

Getting pelted with tomatoes. The "tomatoes" in vocational classrooms are those experiences which bring disappointment, cause frustration, and create conflict.

Learning the procedures and expectations associated with a new work role can be frustrating--especially when the expectations aren't clearly explained. A student in a business education course related such an incident.

> Like if we got a sheet of paper or something that explained the job more so you knew. Like when I switched to billing clerk, the person that was there before didn't really explain it that well, so there was a lot of things that, you know, that I didn't do that I didn't know I was supposed to be doing. . . . I think I was supposed to put in the date or something on the bottom of the green sheets attached to the letter, and she never told me nothing about it. I had to do a bunch of them over.

Even when it is clear about what he or she is expected to do, sometimes another person is confused or makes an error which creates additional work as well as feelings of anger and frustration. In a business education class where students were selling pizzas as a money-making project, the following observation was made:

> Girl burst into room: "I got screwed on the pizzas! I went to deliver the pizzas and I have all cheese--were supposed to be pepperoni!"

Learning what it's like to be on stage also involves identifying "crowd pleasers"--those products which are most popular among one's audience. One not only learns what is most appealing to the public, but also one decides how much to cater to these popular requests. Students who were in charge of producing a newsletter for their business education classmates seemed comfortable with their decision to "give the people what they want."

> We just kind of ask what people like to hear. Like they want a horoscope and . . . stuff like that. We used to have secretarial articles, but they didn't read them. I know I never read them. So we put in like more personal articles that relate to us . . . like if they want something on hair care or something, we can put that in. Or whatever.

Sometimes, as in the preceding example, one's own likes and dislikes coincide with those of the audience. However, what's important to learn in some situations is that one can't assume that his or her preferences will be the crowd pleasers. The food service teacher talked about this.

> We served hot dish today and it didn't go very well. Never does. Think it's because people eat a lot of hot dish at home. But I won't not put it on the menu because of that because I want the kids to see that. They also want to put jello and pudding on the menu. Well, that's kid food. They have to learn that adults don't care for that as much.

Mistakes in our work are sometimes embarrassing, sometimes costly. The graphic arts teacher told his class about the consequences of one mistake made in a printing shop he knew about.

> Strippers and platemakers screwed this job up. A very, very simple mistake but in this case thousands of dollars, not thousands of sheets of paper.

Interpersonal conflicts are not uncommon when people are dependent on one another for getting their respective tasks or a mutual task done. The following excerpt from an observation record illustrates how such conflict can occur:

> Betty now at payroll clerk job. She looks up and calls across to Tami at typewriter: "Tami Jones, have the payroll checks gone out?"
>
> Judy who is still at the mail clerk spot says, "They're not out because I haven't got to them."
>
> Betty: "Then why don't you get to them so I can get the envelopes done and they can go out?"
>
> Judy's voice, controlled and strained: "Do you want this job?"
>
> Betty: "I'll do it if you can't handle it."
>
> Judy: "I can do it if you just hold one." She gets up with pile of papers and distributes around to typists, assistant banker. Face serious and expressionless.

Following this incident, Betty and Judy didn't talk to one another for the rest of the week. After that they resumed their usual friendly behavior toward one another.

Sometimes, even though an experience is simulated and students don't have to suffer consequences in the "real lives," they gain a sense of what could well occur in life-after school situations. An agriculture teacher related an incident in which all the students in his class shared one of these sobering experiences.

> I've got seniors out here who say, "Yeah, my grandpa has a farm, and I'm going to take over and farm it." I say, "Okay. Let's have the PCA (Production Credit Association) guy come down here and get close to your records. What do you think it will take for next year? We will have you put together an application for PCA." And out of the 18 kids in that class, every single one of them was rejected.

In addition to these types of "tomatoes," students in the classes observed experienced other features of "going on stage." They learned to present repeat performances--doing the same tasks over and over again even after the tasks have long been mastered. And they learned that the show must go on at the scheduled time--regardless of how they felt or who was absent. To an outsider, these experiences don't seem to be necessarily and always negative. Within reason, disappointments, frustrations, and conflict can help students lose some naivety

about work situations. Perhaps these tomatoes actually are part of the reason that students perceived the performance as "the real thing."

Being presented with bouquets. Students in vocational classes also experience what it's like to be presented with "bouquets." The "bouquets" are those experiences of feeling recognized, applauded, and rewarded.

Because vocational education courses usually involve the production of goods and services--often visible to those outside of the classroom, many opportunities arise in which students receive "bouquets." Vocational education students experience something analagous to artists who sign their work and to actors who have their names listed on the play program. An obvious illustration of this public recognition was presented in the occupational food service class. The teacher of this class told us,

> Well, I see it as an opportunity for kids to really show the work that they produce. They get immediate gratification . . . especially now since we've gone a step further and changed the serving technique, and so the students are actually serving, their names are on the menu, they're given credit for a lot of the work and stuff, and so I see a place where students can really demonstrate their skills to a wide variety of people. They not only demonstrate to other students that come around, they demonstrate it to the staff that's available in the building. . . . And people often leave tips. And people will often say to me, "I really appreciate your spaghetti today," or "It was good." And I noticed students will also develop in that they will start telling other students, "I heard so and so liked your sandwich." . . . That's pretty mature for secondary students to let other students know you're doing a good job.

Students of this teacher expressed a similar opinion. When asked what he thought other teachers in the school thought about the food service class, a student said,

> They like it. . . . And now I think they like it more because they get waited on and we are learning and it's nice to see kids our age willing to serve and cook and put our own menus together and stuff like that.

Another student in the same class added,

> A lot of times you go like after class--after they've been served and stuff--and you go maybe to a few teachers' classes and they'll tell you how they really enjoyed it, and they ask how it's put together and how we like doing it and stuff.

In some vocational classes, monetary investments and/or returns play a central role in certain learning activities which simulate experiences one might have in business or industry. The following dialogue was recorded in the home economics consumer education class:

> Teacher asks: "How are we going to get the money to finance our company?" One boy responded, "Five dollars per student would give us enough to get started."
>
> Teacher remarks: "I'm not sure if each student can afford the $5. Besides the school may not let us do that."
>
> "Sometimes school gets in the way," said one of the boys. Another boy asked, "What will we do with the money we make?"
>
> "We will spend it on the class" said the teacher. "Like a field trip or a party?" asked another boy. The teacher responded, "Yes."

During the next observation segment in this class, the dialogue concerned the distribution of rewards among the students.

> "How do we decide how to split up the profits if we decide to go that way? Those who work should keep track of their time. Should those who work more be paid more? Is that the way industry works?" said the teacher.
>
> The students had mixed reactions to these questions. A boy said, "Those who invest more should earn more."
>
> No decision was reached but the teacher pointed out that another option would be to give points toward a class grade for work on the project.

A counselor stopping in a business education class asked a student what she thought about the class. The student said she liked it and added, "We even get paychecks!" Although the "paychecks" were not real, apparently they gave students a sense of satisfaction and reward. In the graphic arts class, some of the rewards actually were translated into dollar and cents. The student who was responsible for recording orders for graduation announcements, collecting $6,000 to $7,000 for the announcements, and completing all the paperwork related to the sale of the announcements was given a percentage of the profits from the project.

What we can say, then, about the "bouquets" bestowed upon vocational education students is that they come in different varieties, with different aromas, and in various sizes. However, whether they be public recognition, peer approval and praise, personal satisfaction, or financial payoffs (simulated or actual), they are meaningful to students and give them a sense of "the real thing."

Postscript

> ***I try to . . . let them become independent, doing their things on their own and letting them see the results of their independence, too, as well. Be it good or be it bad. But giving them that freedom as if I were an employer and would***

you get paid for that kind of activity. "What you've done in the last 2 hours--would an employer pay you?" And I often ask them those questions at the end of the hour. . . . I try to let them realize that an employer is going to expect productivity. (Teacher)

CHAPTER XII

CHANGING THE PACE AT SCHOOL*

We are all familiar with the story of the city mouse and the country mouse who each wanted to visit the other's place of residence because they wanted a change from, what they considered, the routine. Each wanted to do something different from the usual. Wanting to experience something different is also evident in today's society as we see people seeking out experiences which are different from what is normal. People who work in offices during the week flee to the country and engage in outdoor activities on the weekend. People who spend their time working with children find it refreshing to cultivate the minds of the older generation, for a change. People seek out and enjoy experiences which are different--which provide a change of pace. Vocational education classes appear to provide this change of pace from other experiences in the comprehensive high school. According to students and educators, vocational education classes have a different structure; provide different learning experiences; provide a link to the outside; and are future-oriented.

Structure

According to students enrolled in vocational education classes, these classes differ from other classes in the comprehensive high school in their structure and organization. One of the major differences voiced by students in vocational education classes is the ability students have to move around the classroom.

. . . a student in a home economics class:

> You're not always sitting down, in the other classes you're always sitting. And there is a lot of paperwork in other classes. There is some here but not as much. And you get to get more active, you get to be yourself, you don't have to put on an impression or something.

. . . a student in a business and office education class:

> Well, this class you get to get up and walk around. Usually, you know, most classes like English or history the teacher is constantly talking. And you've got to sit there and listen. You can't move. And in this class (the teacher) doesn't really talk that much. He'll talk at the beginning of the class and then say, "Okay, everybody get to work." But he doesn't sit you down and lecture you. I like this class.

. . . a student in an industrial education class:

*Theme author was Linda Ernst.

Doing stuff. Being able to talk to people. Being busy, I mean when you go into English class or math class, history, you're sitting in a chair, you're sitting there for an hour. Your leg falls asleep you know, like this.

These responses are typical of those we heard from students in vocational education classes. Being able to walk around rather than having to sit still all day is an important way in which vocational education classes provide a change of pace for students.

In the classes we observed, the ability to move around varied by program and class. Students in a family life class sat around kitchen tables and usually did not get up from their chairs during the course of an hour. Students in a business and office education class sat at their desk working on specific machines for most of a typical class period. Several of the classes had both lecture and laboratory time. Students sat in desks or chairs during lecture, sometimes taking notes, and moved around working on projects during the laboratory time. In some classes the teacher would begin the class with announcements and instructions and students would sit at desks and work on projects during the rest of the hour.

Personal needs are met. Generally speaking students felt the structure of vocational education classes provided a change of pace which was not evident in other classes. This difference in structure provided students with an opportunity to have personal needs met which made the learning experience more positive for students enrolled in such classes. Some students indicated they experienced a sense of freedom in vocational education classes.

A lot more freedom of choice. You can start on whatever you want. You don't have someone saying, "Do this, do that, do this, do that." You do kind of, but not as bad, that often.

. . . freedom to choose what to do:

You just go do whatever kind of work you want. You're not all on one subject at one time. You can do brakes or lube jobs, whatever it is you want to do at the time.

. . . and when to do it:

If you don't feel like it you don't work. (The teacher) said you can sit through the whole class and not do a thing, but that's your problem because you have to earn the hours and if you just sit, then you'll get a bad grade. In all classes it's up to you to do what you want. But, I mean in most classes you get credit for being there. In (this class) you do, but you've got to work for it.

. . . and the pace at which to do it:

It's kind of work by yourself and you can work at your own speed, too. You don't stop after this page or whatever they tell you in (other classes). Go as far as you want.

One student said, "You have more freedom here, but more responsibility."

These scenarios have a favorable ring to them, students are making choices, directing their own learning, and, presumably, developing responsibility. However, one student said this type of experience did not enhance learning for him.

> You seem to get more done if you're in a class (other than vocational education). I don't know. Sometimes I just mess around (in the auto mechanics class) a lot. 'Cause the teacher ain't watching me. I know I shouldn't do that but . . .

For most students the opportunity to exercise choice is a positive aspect of vocational education classes. For a few, however, the structure appears not to be consistent with their learning needs.

Students often expressed a real interest in the content of vocational education classes. Here are some responses from students describing how vocational education classes differ from other classes because they are more interesting:

> It's more interesting to me because I want to farm (a student in an agriculture class).

> I do better in this class because I'm interested in it. And I think it's an easier class because I'm interested in it (a student in an agriculture class).

> You get more involved in it than other classes. Other class work you don't get into as much (a student in a home economics class).

For some students the variety of activities which are evident in vocational education classes add to the interest students have in the content of the classes. Here is how an industrial arts student explained it:

> I like choir. I really like choir. I like singing a lot. And that's just one thing. It's just going in and singing. But here you've got a variety. You're never doing the same thing. One day you'll be working on this and the next day you can go over, when you're finished, and do something else.

A student in a home economics class said vocational education classes are different because you don't do the same sort of thing over and over. Another student in a distributive education class said, "This class has more activities and you learn more than in other classes."

Several students said the relationships which develop among students and between students and teachers in vocational education classes resemble the kinds of relationships one has in a family. This comparison came primarily from students in a business and office education class. The teacher in this class may have verbalized this analogy in a way in which students picked up the language.

Here are examples of the ways these students described the difference between the business and office education class and other classes:

> We are all working at similar jobs and we are like one big happy family.
>
> In this class you feel more like a family. You work together. In other classes you aren't a family, you get treated like a kid.

A student in an agriculture class described the difference which also reflected this feeling in the statement, "You've always got someone there to help you, it seems like."

Other students also referred to the relationships which develop in vocational education classes even though they did not compare these relationships to those of the family. A student in a distributive education class said, "You get more involved with the people and do sales outside of just the classroom."

Several students from a family life class indicated how the openness to express ideas and feelings made this class different from other classes. The ability to share feelings and ideas was part of the curriculum for this course. One student said, "In this class you are a person, in others you are a name and a grade."

The structure in vocational education classes is different from other classes which allows for students' personal needs to be meet. The result, according to some students, is that learning is easier and more fun in vocational education classes.

It's the Way You Learn That's Different

Students and adults talk about how learning is different in vocational education classes. Learning is different because you are always doing something, it's often a simulated job, and you work more on your own.

One student in an industrial education class said this about the difference between vocational education classes and other classes:

> Ya, it's the way you learn. It's that exactly. Here you learn by hands on. In math you can't learn by hands on. You've got to remember and study.

A home economics teacher shared this assessment:

> Basically, I think we have the same goal--what we want for kids. Regardless of what area you're teaching you are here for the benefit of the student and you're here to see that they get things that they are going to be able to use later and to give them some skills that are going to make life better for them. I see that as being something I would hope

> all teachers share regardless of what you teach. So our differences are subject matter and the way we approach it, I guess.

Teachers in vocational education classes approach things differently and, as a result, students learn the subject matter in different ways.

You're always doing something. Several participants in the study said vocational education classes are different from other classes because you're always doing something. One administrator explained it this way:

> Then, in a lot of the vocational courses there is heavier emphasis on more of a lab activity approach, more of a doing approach. So you learn through doing or application as opposed to a French class where you're memorizing congregational words and the emphasis is on words and vocabulary. Although the emphasis here might be that, you take materials and do something with them.

There seems to be an appreciation for being able to "do" things on the part of students. As one student in an agriculture class said, "This is where you get adventure!"

Students also used the word "experience" as they talked about what happens in vocational education. One student in a business and office education class said, "It goes really fast, you learn a lot from practicing or experience . . . you work directly with the machines instead of just hearing about it." One student in a business and office class in another school said, "It's experience, not instruction."

When students are spending more time doing and experiencing, less time will be spent on other kinds of learning experiences such as reading and written assignments. One student in a home economics class said this about how vocational education classes differ from other classes:

> I guess it's because you get to jump right in and do this stuff and that it's not all bookwork or paperwork. Whereas in all my other classes it's mostly bookwork and paperwork.

According to some educators, this "doing" and "experiencing" involves the application of theory. One agriculture teacher explains how he blends the two.

> What is unique is that in every class that I teach we try to teach the theory in the lecture and the classroom. We try to teach the practice and then develop the skill, if there is a skill involved. So when we are learning to judge beef cattle, we learn about it, we read about it, and then we practice on slides, and then we try to go out there and do it for real. In other classes it seems as though the theory is offered and then the problems are presented and you have to solve these problems and hand in that assignment. We like to go one step beyond that, I think.

A vocational education director also identified this blending as a unique characteristic of vocational education classes. This administrator said,

> Obviously there has to be some theory and there has to be some abstract learning in vocational subjects too. There can't be just working with your hands, so to speak. But I think the uniqueness of it is that it really blends the two much more so than most other subject areas.

This practice of providing theory was evident in classrooms to some extent, but was not always linked to the doing to the extent described by the above educators. Although this varied by class and teacher, we generally saw much more emphasis on practice than on theory.

The learning experiences in vocational education classes are often thought of as courses with lots of "hands on" activities. This kind of thinking was evident in the responses from those participating in our study as well. For some the predominance of hands on activities made vocational education classes distinct from other classes which required different skills. One administrator made this comparison:

> I think vocational classes--part of the greatest difference is that they tend to more often have more hands on experience for students than does a lecture-type class or book-type class such as English, or social studies, or mathematics.

Another administrator made a similar comparison.

> I don't think there is much difference in it except in the emphasis on the fact that you are doing something with your hands, where in a math class you have to solve problems. You solve problems in vocational classes too. You also have to make practical applications of it.

A counselor suggested that not all students are capable of developing the hands-on skills which are taught in vocational education classes.

> And a lot more physical dexterity is needed (in vocational education), I think. I think you need people, I mean kids, that go in there need to have some skills and spatial relationships. Not everybody has that. Not everybody that's an academic person has that.

A principal indicated that the hands-on experiences in vocational education classes provide additional skills to those experienced in other classes.

> I suspect one of the opportunities these kids could get, again, is that hands-on experience that they don't get to see in a lot of other classes. Maybe that comes back to the opportunity that it gives them something that has immediate and relevant feedback to them. You can take a kid that is factoring in an Algebra II class and really sees no practical

> application for it other than he's probably told when you get to calculus you're going to have to be able to factor. If the kid is in a word processing course and he can actually type a theme into the word processor and watch that printer give him a clean copy, and go back and edit it or correct it, that's much more immediate feedback. That's an opportunity I think kids can get in vocational classes. Our boys in cooking say--the immediate feedback we get, particularly the boys as soon as they cook something, they get to eat it. That's not like reading Shakespeare and figuring out what you're going to do with it. So I think that's an opportunity for kids that is not present in some of our other departments.

Several students also indicated by way of student surveys that the hands-on experiences were unique to vocational education classes. One student in a business and office class said, "(It) provides hands-on experience for individuals--a different atmosphere from regular school."

Job simulation. In some classes the learning experiences simulate a job situation. This was especially true of the occupational home economics class, business and distributive education classes, and the industrial education classes. The teacher usually takes the role of the boss or coordinator which would result in differing learning experiences for students which are different from other classes which are not occupationally oriented. A common expression in these classes on the part of students is: "It's like I'm really working on a job." Deadlines are met, conflicts are resolved, and work roles are established--just like on a real job.

This emphasis on employment and work experience in vocational education is a part of what makes vocational education a change of pace within the comprehensive high school. Here is how one school administrator saw this aspect of vocational education:

> I mean if they are dealing with employment, if they are dealing with work experience, that is more real to kids than some of the more ephemeral things of whether a dangling participle is going to impact a person's life twenty years from now. So I think for kids the vocational classes have a more immediate meaning and reward than do some of the other classes.

You're on your own. Some students indicated vocational education classes are different from other classes because students "do more on your own." A student from an industrial arts class said,

> In (this class) you learn on your own. It's through your own experience. He'll help you out if you need it, but he likes to let you learn how to do it yourself.

A student in a business and office education class said, "You just come, kind of work on your own, you are not having people tell you what to do all the time." A student in an industrial arts class added that being on your own "makes you

more responsible." She said if you don't have anything to do it's your responsibility to find something to do and "just keep busy."

Although some students talked about being on their own in vocational education classes, others talked about working in groups. This appears to be a contradiction. However, it would seem students were talking about working without constant supervision by the teacher, whether they were working alone or in a group. The teacher was typically available for help and direction, but would encourage students to go on their own until they encountered a problem.

Future Oriented

The courses in vocational education are also different from other courses in the comprehensive high school because there is an explicit connection made between what is learned in the class and the student's future. It would be inappropriate to suggest that other classes in the high school do not address future needs of students because, of course, they do. However, students can readily conceptualize this connection in vocational education classes, and indicated it is not as evident in other classes.

Students were asked how the vocational education classes were different from other classes. Many students responded that it was different because this class had something to do with the "real world" and the future. Here is an example of how one student from a business education class viewed the class:

> I think I'm learning more in this class than any of the other classes. I think the other classes--there's English, we're reading the book, right, learning things like that economics--we're learning about way back, economics and things like that, and I think this job is going to benefit me more in my future than the other classes.

We heard this kind of expression from several students. From the students' perception, other classes were less relevant because they could not make the connection between the other classes and what they saw themselves doing in the near future.

Students described the difference between vocational educational classes and other classes in the high school in that vocational education classes deal with their career interests. One student in a business and office education class said this class, "prepares me for the working field that I am interested in." A student in this same class said, "It teaches me skills and how to act when I am in the business world." Another student in a home economics class said, "It just helps me because that's what I want to get into." One student said,

> You actually learn skills you will use on a job. Other classes, you just learn and hope you pass a test. This way I get experience.

Other students referred to personal growth which would be helpful in their future. One home economics student said, "We learn about ourself and other people and how to learn about the future." Another student in the same class

said, "This one gives you a chance to look at ourselves and try to understand what we want out of life."

Most of the responses from students referring to the future orientation of vocational education came from students in business and distributive education and home economics education and were expressed to a lesser extent by students from the other vocational education areas. This study does not provide an explanation for this behavior on the part of students.

Links to the Outside

Vocational education classes are different from other classes because there are numerous course-related activities which take place outside of the classroom itself. Some of these activities are part of the requirements of the class and contribute to the student's grade for the class such as job placement. Other examples of activities where participation is typically optional, but strongly encouraged, includes selling of products in the school or community, participation in youth organization competition, and attendance at banquets and other social functions which are class-related. Although it is not generally so, some teachers do include participation in these activities as part of a student's class grade.

Students in this study were involved in a variety of activities in addition to time spent in the class. Students in a distributive education class went out to breakfast before school started in the morning on a regular basis. These same students also sold pizzas in the community as part of a class project. Home economics students made and sold ice cream bars to the student body right after school. Students in a business education class were involved in state and national competition as well as having a banquet for their employers from their job site.

Job placement in the community was a part of several of the classes we observed. This component of the class provides a direct link from the class to the working community. The teacher often contacted potential employers to develop a pool of employment possibilities for students. The teacher supervised students on these job sites by visiting the place of business and getting feedback from employers.

Other classes provided work experience as part of the classroom experience. The outside world is, in effect, brought into the classroom. For example, a home economics class operated a restaurant as part of a foods class. In other classes, individual projects provide simulations of situations which would occur as part of a job.

Students also talked about other activities that take place outside of the classroom which are social in nature and are unique to vocational education. We saw evidence of students getting together for picnics and softball after school and students planning a special day-long trip with funds from a class project. Why do these social events occur more often in vocational education classes than in other classes? As we observed the development of these activities, the teacher was usually instrumental in instigating and carrying them out even though the students participated in planning and carrying out various aspects of the activity.

The student organizations are an important part of experiences for students in vocational education classes which also makes these classes different from other classes. These organizations provide students with opportunities for membership and leadership in a group as well as providing opportunities for competing at local, state, and national contests. For many students this involvement is a positive aspect of taking a vocational education class. One student in a business education class had been involved in the student organization through competition and holding offices. After graduation she planned to attend a college where she could continue her involvement with the organization.

The numerous opportunities students have to link the contents of the class with the outside world helps students think about and prepare for their future. Vocational education classes appear to be meeting a need these students have to prepare themselves for leaving school.

Postscript

> ***You get more involved in it than other classes. Other class work you don't get into as much. (Student)***

CHAPTER XIII

PROVIDING AN APPROPRIATE EDUCATION*

The term "appropriate" is often used in a context where special attention must be given to matching needs with solutions. You hear the phrases appropriate technology (for developing countries) and appropriate force (for dealing with riots and terrorists). In these contexts, appropriate usually involves some serious judgments involving value questions often at variance to accepted principles or laws or ideals. It involves the special tailoring of a response to unique circumstances--often controversial. Some might refer to it as using "common sense" or being "practical." The word appropriate can also be used in a discriminatory sense to legitimize inequity. With this meaning it is delicate acceptable language (a nicity) to rationalize doing what might be less than ideal or best for practical, "you know", it "won't work" reasons. A frequent message we heard from school adults as to the purposes of vocational education seemed to resonate with these meanings of appropriate--vocational education is appropriate education for some.

This chapter will explore the above message in terms of questions such as why is vocational education appropriate, why for some and not for all, who are the some and who decides who they are? Caught up in this analysis are questions about the "pecking order" of the worth of various areas of knowledge in the public secondary school. For example, is the knowledge taught in vocational education of less worth than the knowledge taught in a chemistry class? What are the consequences for students who take a relatively higher proportion of vocational education? Are they getting a "second class" education? Are the students and adults in the school aware of and accepting of this happening? Whose perceptions about the worth of various areas of knowledge should be paid most attention--students, vocational education teachers, other teachers, counselors, administrators. These are provocative and sensitive questions, particularly in the context of public education which outwardly communicates and is held responsible for providing equity in education yet must serve <u>all</u> students in a given geographic area with a fixed set of resources. In this context, the concept of appropriate with its several meanings finds its special use.

Vocational Education Is for the Non-College Bound

By far the most frequent response to the question, "Who do you think vocational education is serving?", in the secondary school was that it was those students who were not planning to go on to college after high school (because they don't want to or can't for one reason or another). Typical responses were as follows:

> The students who are not planning to go on to college. (Counselor)

*Theme author was George Copa.

> I think it's for everyone but if I had to pick a group that it's most essential for, I would say that the non-college type kid definitely needs to explore that area. (Counselor)
>
> To help girls who don't want to go to college have the skills to get a job. (Student)
>
> I think for the most part there is a stigma that vocational (education) is for the most part for those students who can't go to college. (Superintendent)
>
> Well, they are the kids that do not have interests primarily in college for the most part. (Principal)
>
> I think for the most part your kids that are involved in your vocational classes are not your college bound type kids. (Vocational Teacher)
>
> A student taking a series in home economics or a series in industrial arts or a series in agriculture more than likely is not going to go to college. He may go to some kind of vocational school, but it is pretty unlikely that they'd go to college. And if they do go to college, I think they crimp themselves in getting into high technical fields. We try to steer kids that have the college goal into college prep places that they'll have a better chance of success in college. (Superintendent)

While the above responses represent a common and initial response to the question of who vocational education is serving, there are many subtle twists, complexities, and ambiguities when this response is pursued further.

College requirements are to blame. One of the subtle dimensions of the response to who vocational education is serving is that secondary schools are not responsible for the place of vocational education in the curriculum. The fact that non-college bound students predominate these courses is caused by college entrance requirements which do not recognize the worth of vocational education. This rationale and sometimes frustration was communicated as follows:

> When higher education puts limits and requirements on college entrance requirements that deliberately eliminate vocational background, that's a limitation (on students opportunities when they take a vocational education class). So it seems as though now students who are going to go on to college are being told, and their parents are being told, and they believe this, that they have to take a foreign language in high school. Bull! (Vocational Teacher)
>
> Business education is not basically what colleges are that concerned about in a student's background. If you suddenly

> decide that I'm going to this high quality college and you have never taken any science beyond grade nine or math beyond grade nine, never had a foreign language, never studied world history--they might wonder about that kind of a background. It could be a limiting factor. . . . If you spend all your time in vocational courses it could conceivably be a handicap (to going to college). Now the agriculture teacher wouldn't say that. He'd say they are getting a lot of science things in my courses. They're getting computers in my courses. They're getting speaking things in my courses. His (the student's) college counselor can't look and say, "Well, I see you've had chemistry with a B and you've had physics with an A minus." You had ag nine. You had ag ten. That doesn't show and it is not the same. You don't get a systematic background in physics by taking ag, I don't think, although you get many ag physics concepts. You may be learning about writing in ag shop. Nothing is clean cut. (Principal)

Even vocational education teachers sometimes feel that college bound students should be encouraged to take other than vocational education courses if a choice must be made.

> The college motivated students are going to take chemistry and physics first, I would think. And I guess if they came to me and asked which way to go, I would tell them to go that way. Take the chemistry and physics. And, pick up the (vocational education) maybe a little later.

Commenting further on the relationship of vocational education and college preparatory courses, a counselor and superintendent seem to rationalize that existing college requirements should not include vocational education.

> The vocational classes are much more oriented toward skill development. . . . but they still have an intellectual component . . . it's a matter of degree. Certainly not as much as physics and humanities and great literature that are more abstract.

> They're (vocational education courses) specific. If you take agriculture, you learn specific things that you do to be a better farmer or a better operation of a farm. You learn specific skills. If you take college prep physics you learn concepts. Kids graduating from a high school that has the ag sequence of courses can probably drop into a farm job, operate his own farm, work for a farmer. The student with a course in physics and chemistry, for example, he really is not prepared to do anything except go on to get additional training to become skilled enough or trained enough in that technical area to do something. . . . If you're looking for someone to be a computer programmer or . . . a technician, you usually don't start with high school physics as the end training.

Nothing is clean cut, however college admission requirements are being used to rationalize and attribute blame for college bound students not taking nor being advised to take vocational education courses in any extensive way. Although value is seen in the knowledge taught in vocational education for college bound students, it is not as highly valued as the knowledge taught in some other courses because of what colleges value as reflected in their admission requirements and indicators of student success.

Good students a surprise in vocational education. Given the impact of college requirements on the sorting process which goes on in high schools, it is not difficult to see why it would be surprising to see good students (good in the way that colleges seem to value) in vocational education classes. As a superintendent describes,

> Because the first thing we do, we see a bright kid and the first thing we do is say, "Hey, he should be a doctor or an engineer." No one ever looks at a bright kid and says boy you'd be a hell of a plumber. No one looks at a bright kid and says, "Wow if he'd go into electrical work or that sort of thing he would be a dandy." The thing we'd do with that kid is say electrical engineer. I don't know how you're going to change it. . . . This isn't true of whole departments, but by-in-large, vocational education now serves students who are in the lower half of the class. And there are exceptions to that. We've had kids that are number one and two in the class that will go on and take a vocational course like machine training or something like that their senior year, but by-in-large you'll find that either they're not the most gifted students or they're not motivated enough to study. They don't have the study habits required for difficult courses.

Other school adults put it this way:

> We don't have kids that are going to college in industrial arts . . . I don't know if you would find one. A kid who's taking calculus and French IV and physics and chemistry and stuff doesn't have time to take industrial arts.
>
> . . . A lot of our top college bound kids don't have room in their schedule to take some of our vocational courses. . . . But we also have some very strong college-bound kids who will take a vocational course from time to time.

It is telling in this circumstance that those occasional "very strong college-bound kids" are noticed by vocational teachers and school administrators. Sometimes it seems as though they are reminiscing as they tell about that exceptional student they had in class a few years ago or they are using these exceptions to communicate that vocational programs are "all right" and can add benefit to even the good students. For example, examine these two stories by a superintendent and vocational teacher, respectively, about exceptional students in vocational education courses:

> One of our finest students we ever had in the school went through our model office programs and is now, I forget her exact title, is in management within four years of graduation. She's in management over at Control Data in a word processing department. She had some AVTI training, some word processing training after she left here but her basic training was right here. She could have been a success in anything she wanted to do. I think that's an example of an outstanding student benefiting from vocational education.
>
> A few years ago I had a girl that was a National Merit Scholarship winner. She's out east at Tufts University. Is there a Tufts? That's where she's studying. It was a feather in my cap to have her take my course. . . . To like it and to talk a lot about it to her parents. Her dad was in to look around. He was very pleased.

Vocational education is for lower ability students. Given the perceived correlation between being college bound and academic ability, vocational education becomes the appropriate place for lower ability students in the minds of school adults. Additional responses to the question, "Who do you think vocational education is serving?" are informing as follows:

> I would say it's serving the middle half of the academic. . . . Or the lower, middle to lower. The students who are not planning to go on to college. (Counselor)
>
> Right now they're probably serving the lower 50th percentile. (Vocational Director)
>
> We don't get the cream of the crop, but they do contribute. (Vocational Teacher)
>
> The low middle as far as class rank and grades. And then so far as ability, even though there is a wide spectrum from the bottom to the top, it would probably be the middle. Because I think ability of the kids is a little better than their rank and their grades. (Vocational Teacher)

As the last response seems to begin to imply, there may be students of differing ability, and ability may need to be thought of more reflectively in terms of aptitudes, achievement and interests. The vocational teacher responding above went on to say about his students, "They have a different priority. They have a different priority."

A vocational director begins to unravel the issue further in terms of the value of knowledge taught in vocational education verses other courses and the subsequent value of achievements.

> In the beginning (of our vocational education programs), they thought we were grading our students too highly here, because a student never had gotten more than a D, and it happened

> that they got an A. So we did a thorough survey of how we graded and set up our grading standards and so on and we satisfied them now. They don't get concerned when an A comes back. We found out that we are just as tough as anybody else. The difference is that a kid for the first time found something he wanted to do and did it. The ability was there. That student would not have been rated in the lower 50 percent if somebody had succeeded in getting him motivated. He might have been in the top quarter of his class. He had the ability.

A vocational teacher also noted his sensitivity to the worth of knowledge taught in vocational education.

> I feel so strongly about it (basic skills taught in vocational education) that when this school moved to an honors diploma and made a list of classes in group one and a list in group two, and students who definitely wanted to get an honors diploma rather than just a regular graduation diploma had to select three classes out of group one and five more classes out of group two. And none of my (vocational) classes were involved in that, I challenged that as far as I could challenge it.
>
> I think there is that feeling on the part of social studies, English, math and science teachers that they're a cut above the vocational teachers.

The idea of various types of ability and relation of interests to these abilities was noted as follows:

> Everyone has their own career goal and their own set of unique abilities to give to the world. I mean if everybody was an academic type we couldn't make this world work . . . I am here to help them fulfill what they see for themselves. (Counselor)
>
> I don't think we can say at all that their (student taking vocational education) abilities are less than others. I think it's an interest type thing. We have kids who have all kinds of abilities and no interest in college and they are very interested in the vocational. (Principal)

The "easy" classification by ability also gets caught up in the relationship between ability and socio-economic status of the students' parents and the community in which they live. As a vocational agriculture teacher explains,

> I think that probably this community is agriculture and blue collar more than some other communities in our area. So I think that sometimes these kids probably don't look on education as means of earning a living so much because they don't have as many examples as some of of the others . . . I don't

> look upon vocational education as sort of a dumping grounds for the kids that aren't so bright, necessarily, but I think that a lot of our kids that go on to the vocational areas are very bright kids and it gives them the opportunity to learn about these things.

Also apparent from our interviews and observations is that the ability level of students in vocational education may vary considerably between vocational education fields and among schools in the same field. As a vocational director noted for his school's vocational programs,

> If I break our programs down, I'll say our T and I programs are serving economically and academically disadvantaged students with a smattering of the students that are away from the mainstream. But our other programs are serving a real broad cross-section of our students. If I look at our follow-up data and I look at class rank and stuff like that, our T & I programs, they are . . . in the lower two quartiles but if I look at our business and office program they are in the upper two quartiles.

This director goes on to note his concern about the quality of the courses in more basic subjects to which students who take vocational education are typically enrolled and a concern for the impact on a course when it contains too high a proportion of mainstreamed special needs students.

> (In) machine trades we need a strong math background. We tell the counselors that. They better have it because even if they get motivated, if they haven't got the basics, they still can't cut it. You can't take it from day one. Horticulture is one place they had to unload on us (because of low enrollments) . . . eight kids were pushed in there that didn't want to take horticulture, that makes for a bad class. One counselor says . . . that's where the special education students should go. You can take one or two but if you start putting them all in one class, it varies.

Further, there are differences in the kinds of "jobs" various vocational education courses are focused upon. Particularly noteworthy is the difference in consumer homemaking versus other vocational education fields. As a home economics teacher explains,

> Consumer homemaking is a little different because you're preparing kids for a job they are going to have. They are all going to live in this world. They are all going to relate to people. They are part of a family. They're going to be a part of maybe another family. So the skills you're giving them are going to be used, period! That's a career. That's an occupation that every one of us is going to have. So consumer homemaking is a little different.

Unfortunately not all of school adults or even the students themselves stop

at labeling vocational education as serving the non-college bound or the lower ability or simply students who are different. Some of the labels are much more "cutting" and seem to mock an educational context.

> Boy I am glad you've got this going, now I've got a place to send all our eight balls (Vocational director's quote of superintendent about new vocational programs).
>
> Charles is bad for our image. Charles is the stereotypical auto mechanic. Can't read very well. But he's handy. He can take a carburetor out and put it back on in three minutes. But that wasn't the problem, Charles. It needs spark plugs. (Vocational Teacher)
>
> I guess people (who take vocational education) who are mechanically inclined . . . people who are more interested in using their hands than their minds in an academic sense. (Counselor)
>
> It's more of a skills class than a mind class. (Student)
>
> Boy, I had five eight balls in there last year. I mean they were eight balls. (Vocational Teacher)

Who Takes Vocational Education Is Not a Secret, But It's Not Openly Discussed Either

Students taking vocational education courses openly express their feeling that most other students and other teachers do not use positive adjectives when describing who takes vocational education courses. Some of the students comments were as follows:

> Other students? They just look down on it. You're supposed to take physics or math or something like that.
>
> On weekends you know, like people down here in this wing, in the job classes, on weekends they go to their partying and the people upstairs go to their parties. Every school's like that. It's just how they break out or divide.
>
> I think that they think it's a waste. That we don't do anything in here, which is so stupid. They don't know what goes on in here.
>
> They figure you must be stupid or a "fry" because you want to get out of school early, you can't handle six hours of school.

On the other hand, some students did express that other students felt that vocational education was a good class or real fun. For example, examine these statements:

> I'm sure they like it. They wish they could be in it . . . Some people are jealeous that we can leave so early and they have to stay.
>
> I'm sure they think it's interesting . . . They probably think it's kind of messy to. My hands have been inky and I can't get it all off.

But these comments are much less frequent.

Students in vocational education courses register similar views about how other teachers in the school feel about vocational education. Their comments about the feeling of other teachers toward the vocational education classes in which they were enrolled run as follows:

> I feel like some teachers say, "what's that, just an easy A?" You know, you can go in there and get an easy A. They don't think you have to really work hard. But you come in here every day, especially in the summer when we don't got air conditioning in there. Before we had the fans this fall it got really hot. We'd really sweat and had to work hard. Teachers say, "Aw, that ain't nothing. That's just food and anybody can put food together." But you got to know what you're doing. You can't just sit around and do nothing.
>
> Teachers, because you're on the OJT don't like you. They think you're just a little punk that's getting out of school early to work.
>
> Some of the teachers have the attitude that it's just a blah class. The kids go there and goof off. They're not learning anything. But then some of the teachers think oh, it's a good class. It's good for the kids to learn stuff like that.
>
> Well they think we're just fooling around all day getting dirty.
>
> I think some of them don't--like the English teachers--don't really particularly care for us.

Again, a few students voiced positive feelings by other teachers.

> I suppose they think it's pretty cool that we're making things . . . They think we have fun making stuff. I suppose they think it's all right.
>
> They think it's real good. I hear a lot of teachers, well, you should take office if you need help on your schedule.
>
> They like the Frosty Bars. . . . No ones really talked about it or anything.

What is evident in these remarks is that students in vocational education classes are confronted, at best, with very mixed perceptions by other students and teachers about the value or worth of participating in vocational education. At worst, the perceptions are of vocational education being useless, a waste, blah, and an easy A. And these perceptions are not a secret if you ask students directly about them--they know what's up. Some students seem to shrug their shoulders at this evaluation of something they are doing--one wonders what is going on in their minds about this issue. Other students resist as is evident in some of the above remarks. They go on quite vehemently explaining why other students and teacher's perceptions are in error; some are even willing to take action to change these perceptions. As one student in an agriculture class notes, ". . . People will say, 'Oh, no, they're in ag' and it's just a big stereotype and I want to change that so bad . . ."

What is disheartening is the consistency in the remarks of both other students and other teachers. A student in vocational education might expect opposing valuations by other students. After all, they are not adults and everybody likes to think they made the right decisions in selecting their elective classes--just like differences of opinion over cars, bicycles, records and clothes, depending on the ones you own or prefer. Students in vocational education are even willing to admit that some of their classmates are wasting time or are dumb or seeking an easy way out. Students are probably better able to resist the valuations of other students because they experience it more frequently and it is among peers. But how do they resist the valuation of other adults in the school. More study needs to be made of how students in vocational education feel about and internally cope with their perceived less than positive valuation of vocational education by other teachers and the extent to which these valuations actually exist among other teachers.

Students Are Chosing Vocational Education

Then there is the argument that the issue of being appropriate, both its positive and negative meanings, is all for not since students themselves chose to participate in vocational education. It is an elective course. Nobody is "doing them in" if there are negative consequences; they are doing it to themselves. These sentiments are echoed in the following comments:

> So yes, there is a particular group (who enroll in vocational education) but I don't believe I can identify the group ethnically, or by sex, or by ability . . . the only thing that makes them particular is that their choices are this way. (Associate Superintendent)
>
> Well, there's my counselor and I talked to my mom about it (enrolling in vocational education course) and my dad and they say, "It's up to you if you want to do it. If you do, that's good. If you don't that's fine." (Student)
>
> There is by the time you get to your junior year, okay, there is a group of students that have trapped themselves more into taking more vocational school programs than others. But that's their decision. That's not us posing decisions upon

them. It's based upon what their goals are and what they see their skills are and quite frankly what they perceive as being the harder courses versus the easier courses which sometimes surprises them, but still, you know, it's their perception. (Counselor)

Few students expressed a complex and lengthy explanation for how they made their choice to take a vocational education course. When asked who influenced them to enroll in the course they were in, common student responses were: brother, sister, friend, student who took course last year, counselor, parents. And the reasons for enrolling were often not very sound educationally.

To get out of school early.

You can get out early from school, that helps alot, helps the day go by easier too.

I signed up for a different class, but I wasn't able to take advanced auto . . . because it was too full. So I had a choice of taking child care or this class. So I took this class. It sounded easier than child care.

Cause I was never very good in gym and this is kind of the alternative to gym.

Easy credit. . . . Now it's kind of fun because you can make chow. I didn't know we were going to make something like that. I didn't think we were going to do our own company and sell things like that.

Counselors talked of trying to combat the notion of taking vocational education because it was perceived as an easy credit but were only sometimes successful. In the words of one counselor,

It's not vocational education's fault (that it may limit opportunities for students), it's the students fault . . . A student has the perception that vocational education programs are the only one he can pass or she can pass, or who is saying, hey, I'm going through high school with the easiest route possible, and then end up going out of school and later having some career options that they may want . . . but didn't have the advanced math and they took what they though was the easiest route. But that's not vocational education's fault. That's the student's fault . . . Some kids just say flat out, "Don't put me in anything that I can't pass." And I'll say, "I think you can pass a lot of things." "Well, ya, but I don't think I can. So just put me over here. Where is the easiest class?"

A vocational teacher seems to recognize the lack of direction in students they see when saying,

These classes (vocational agriculture education) are made to

benefit and hopefully they do. So many kids come in. They don't know what they want to do. They just want to take the class. And I guess my feeling is that if you can motivate that kid somewhere along the line, and find something he's interested in along the line, then maybe he's going to become a better student all over. And that's what I look at. Trying to find something. And it could be the craziest thing. It could be maybe wildlife. It will turn one kid on and that's all he's excited about. And he just goes nuts over that. And maybe that helps him stick with it (school) and stay in the program.

What's Appropriate Is In The Eye of the Beholder

Who is to judge for someone else what is an appropriate education for them? Who is "all knowing" as to the motivations and interests and expectations and consequences that students have for enrolling in a set of high school courses? Perhaps it is best left up to the "eye of the beholder" to judge what is appropriate education at a particular time and place for themselves.

Some advise not making a "big deal" about who takes vocational education; they simply see it as "just another class."

I don't think anyone perceives these classes (vocational education) as being different, you know, vocationally-oriented as opposed to other classes. Perhaps the auto repair class might be viewed as vocationally oriented. I'm talking about perceived as such by the teachers and the students. The other classes are just part of our regular curriculum and students don't view them as vocationally oriented. As I would say even with the auto classes and the occupational foods classes, as far as similarities, students just see those as part of an elective situation that they can choose from. (Counselor)

All courses receive the same grades; they are not weighted. If it's an A in vocational programs, it's just as good as an A in calculus. I have no problem with that and a lot of people do. (Principal)

You get a few college bound, but the majority of the kids in the program are what I consider average kids. He's average ability. They're decent readers. . . . They're fairly decent on mathematical abilities. They're kids that will get along with other peer groups. They're not finatics so far as different cliques or groups in the school. I've got a couple of heavy metal kids but they're not crazy. (Vocational Teacher).

Some voiced the opinion that the expectations for vocational classes are the same as for any other in the secondary school.

They (other teachers) shouldn't have no negative feelings

about it because you get your work done. You do your work. You know, it ain't just like five days a week you come to school and go in that class and play games and don't do nothing. It's a class that's being taught and you learn so regardless. (Student)

If a vocational program is only skill-oriented and if a vocational program means the kids don't have to take anything challenging, either in vocational or nonvocational courses, then it's (being in vocational education) limiting their ability as human beings and its not preparing them for anything. But a quality program I don't think is going to limit anyone. (Superintendent)

We'll give them the academics. The academics are going to be there. We're going to mandate it. We do a heck of a job on the academics. Our kids are really well-prepared when they graduate. But I think there's some, some could try some of these other programs (vocational education). It goes back to getting people to see that it's not less than. That's the unfortunate part of it. (Counselor)

The quality of professional people we have in our vocational programs is equal to or exceeds our staff as a whole . . . I'd say in all our programs, the expectations of kids . . . either equal or exceed what we might find in the more traditional disciplines. (Principal)

Others point out that those taking vocational education are not necessarily not college bound. Rather they may be taking vocational education so that they can secure a job while in college to help pay the necessary expenses. As noted by a teacher,

A lot of them refine their skills so they can work when they go through college instead of working at McDonald's or something.

Looking on this brighter side, and leaving it to the eye of the beholder, the words of a superintendent and a counselor make a good summary.

Well, I don't know, if a real bright kid . . . goes into vocational rather than going into becoming a doctor or whatever, I'm not sure that that's the greatest tradegy in the world because we need bright people in all our jobs . . . I think . . . that's what they're interested in doing and want to do. They might not be happy trying something else. (Superintendent)

(Vocational education is serving) those that aren't sure of what they want to do in life and are willing to admit that they're unsure. Kids who sometimes do not have a lot of confidence in themselves but gain. To me it's just a miracle

sometimes. All of the activities just pull them out. They really look good. Many of them go through this whole process and end up doing some really spectacular things in their lives. (Counselor)

Students in Vocational Education Are Only Exploring and Not Making a Lifetime Commitment

Care must be taken in labeling students as vocational education students. Many are just exploring their vocational interests through vocational education. They are not making lifetime commitments to vocational education or the specific field they are studying. Rather, it's a period of tryout to see if it fits as is evident in the following comments:

> They (students in vocational education) do them to feel out the world of work a "little bit." They don't really know what's out there and what they want to do so they kind of play around with some of these courses to see, gee would I be interested in this. So I'll take a couple of Ag classes and I'll take a shop class and I'll take some more math and I'll take chemistry or something like that and kind of see what I'm good at. (Counselor)

> And we talk to juniors and seniors and they don't know what the heck they want to do. And there's no question that the more varied experiences they can have in a high school setting, the better prepared they are to make some intelligent choices further on down the line. So if we were to have nothing but college prep types of courses, not only would we be doing a great disservice to those students who are definitely not going to college, but we'd be doing a disservice to all the kids in that we wouldn't be able to give them those opportunities to explore and develop some skills and find out what the various options are. (Counselor)

Because students are exploring their vocational interests, a wide variety of students might be expected in vocational education courses. This happening was alluded to earlier and is evident by the wide range of adjectives used to describe students in vocational education classes.

> We've got a national merit scholar and alternate this year too plus the valedictorian . . . and we are still servicing the students who are in the middle and the lower end of the spectrum academically. (Vocational Director)

> Well, I think it's serving a number of kinds of young people. I think it's serving young people who are looking for some specific kind of training that's going to provide them with "some income to further education. I think it provides an opportunity for young people . . . who have already decided on an occupational choice in an area that they like and so it's kind of an entry level opportunity for them. (Principal)

Providing Vocational Education Is Just Being Practical

One meaning of being practical has to do with making the best of a difficult situation, particularly not being idealistic. It refers to resigning oneself to what is possible and feasible rather than fighting long odds to make the situation what it should be. The usual phrase is, "Why don't you just be practical!" This meaning of practical is very close use of one of the meanings of "appropriate" used in the introduction to this chapter.

Vocational education's role in a comprehensive high school. In reviewing the notes and observations from this study, we got the impression that vocational education was a means by which a secondary school could be "comprehensive." Comprehensive in the context of the secondary school means serving all students in a prescribed geographic area (school district) under one roof or series of roofs and one administration. In a comprehensive school, vocational education is seen by many as a practical solution to serving those students not going on to college--it is responsive to these students in terms of needs, interests, and their ability to benefit from secondary education. In this way, vocational education is thought to be practical for the school and for students. Consider some of the following responses.

> . . . For the most part they're practical classes. A lot of the students that you find in the class probably aren't real goal-oriented students who, when they get out of school aren't probably going to go much further than a vocational school. If I could get them to go to vocational school, I'd consider that a success. So a lot of these students aren't the kind of students that would sit down and take a science class or an advanced math class or any class like that. But by taking ag, we can work in some of those kind of things in a way that maybe he doesn't realize and yet he'll sit down and do some of the work and those things with it. . . . I think we're all (all the teachers in the school) trying to do the same thing . . . turn out a student who can do a good job in society and not be taken advantage of. (Vocational Teacher)

> It (vocational education) better be serving the kids. Realistically, I think it also serves schools. It provides a place to put some kids who choose not to function or are having difficulty functioning in some of our more advanced courses. . . . Vocational programs provide a structured opportunity for kids who aren't college bound to have some things that may interest them. That ought not be the basis for offering the programs, but it certainly is in the mind of a lot of schools. (Superintendent)

> (It would be) absolutely asinine to take vocational education out of high schools. . . . Two-thirds of our kid's don't go to college. They're not going into any form of higher education. I think they need vocational education. I think they need it very badly. . . . The talk about dropping music and

> dropping art and dropping vocational education is ridiculous because for a lot of kids that's where their interests are. It's awfully hard to teach a pure academic program to 100% of the kids. (Principal)

> I don't have any hard data to back this up (but) it (kinds of students served by vocational education) would be the kids who tend to be at the lower end of the socio-economic scale and also the academic scale. I'm sure that's a generalization, that's not always true. . . . I feel some people don't like that but somebody has to serve those kids. They are there and they have needs and in some ways it's a plus for us that we can serve them and help them to learn something. (Vocational Director)

In all of this it seems that secondary schools are trying to grapple with providing some sort of appropriate education for all of the students under their care and responsibility. These students vary widely on a variety of dimensions. Perhaps it is overly simple, but the curricular planning process was described very practically by a counselor as follows:

> I suppose a lot of it comes down to what schools in general do provide. We always have to provide certain things. You have to provide language arts. You have to provide certain basic math courses. You have to provide certain basic social studies classes. After that we seem to provide the elective that we can handle with the staff we have. We see where student interests lie. We always have them indicate before we make up our master schedule where their main interests lie so that we can add a section of this or drop a section of that or throw out a subject all together if the interest is no longer there. More recently we're been looking at trying to emphasize the more difficult academic things because of all this talk about excellence, nation at risk, and all that.

Matching student's probable destiny and educational programs. In the previous discussion of the role of vocational education in the school's delivery on the notion of a comprehensive high school, it was apparent that sorting takes place in high schools, whether it be by the students themselves or the school adults. There would be no need for a variety of programs if there were not differences in students. Practically, given the variety of programs and differences in students, the next logical step to gain most effectiveness and best use of resources is by beginning to match students and programs. Matching forces the development of categories of students since most programs take the form of groups of students rather than individualized programs. Categories seem to be developed on the basis of students present interests and performance in school and on probable destinies in terms of post-high school activities. Here the secondary school is assuming a very powerful role in the life of students and society.

As was detailed earlier, with this matching concept in mind, there are several categories of students who make their way into vocational education

classes. This happening is summarized by a vocational agriculture teacher as follows:

> I believe the vocational classes that are offered in the . . . ag department offer students a chance to grow in themselves, to develop leadership and to learn some ag. I think those things serve students who fit into several categories. One, the pure agriculturalists who absolutely know they want to be in agriculture some place. Two, the students who want a challenge, want to grow, and want to go ahead but don't particularly see that physics and trigonometry will do it for them. Maybe they are a little shakey on whether they would succeed in those areas. Three, I have students who don't want to do anything in the sciences, math and advanced English areas. They want to work in the shop and plant trees. That last group includes students who are being encouraged to complete high school by their parents or whoever. They have to stay in school until they are sixteen. Some of them have to stay in school until they graduate because mom and dad said so.

Other basis for vocational education being practical. In addition to being practical by meeting the needs of schools for handling students with many differences, there were some other bases for being practical that arose in our discussions with students and school adults.

For example, students sometimes voiced the opinion that they needed to take vocational education to help their families or themselves right now. Responses with this "bent" are as follows:

> I couldn't handle six hours of school. I can barely handle three.

> She (my mother) says not only will you learn to cook better but it will help me help her out when she's cooking and stuff. (Interviewer: Do you do some cooking at home?) A lot of it. Because my ma goes into the hospital every now and then because she just had kidney surgery. So I'm the oldest so I'm the one left to do that.

This view was confirmed by the graphics arts instructor.

> . . . Some of our kids are from some really very shakey home lives right now and it's so necessary for them to be able to support themselves.

For these students practical has a much more immediate meaning as a way to survive in the short term.

Practical also covers the perspectives communities sometimes have to vocational education. These can take two forms as indicated in the following responses from school counselors:

> I think we need more of a balance (in academic and vocational offerings). Our community doesn't allow that . . . Most of the people, for the most part, are either managerial or professional. Then we have obviously other groups but these people in other groups want their kids to go into managerial/professional rather than vocational. But that's naive. We know that there are kids that are going today that are going to leave the school in June that are going right into the labor market . . . I think the coop programs do an awful lot but that's really a small group of kids. . . . I think the programming is dictated by the community.
>
> . . . This is known as the blue collar community and that's the way a lot of the people . . . think. Vocational education is a big thing for them.

The administration of these two different schools face a different context in trying to be practical in their curriculum offerings.

Another dimension of practical which raised-itself several times during the study was that vocational education was a practical part of the secondary school's curriculum because of future job market expectations. As a vocational director noted, "I think we're probably sending a lot more people through the college system than the nation needs in terms of its productive capacity." But he went on as others often did not to point out another perspective of a college education.

> And I'm a college graduate too so I'm not saying it's not good. . . . It's good in and of itself, just to become a more knowledgeable person, but sometimes it should probably be divorced from job preparation. We sometimes sell college as to get a better job. And, that's probably where we're doing a disservice to the young people. If we promoted it as, "Yes, college education is a very worthwhile thing." It will broaden a person's total understanding of him or herself, and provide just a better education. And then also find some occupational preparation either through the high school system or through your AVTI system, your technical college and universities.

In a related way practical can mean the last opportunity to finish school and gain some specific, marketable job skills for some kids. As a vocational teacher explains,

> We've got a lot of students who aren't going on anywhere. High school's the last form of formal education they are going to have. I don't agree with that. I think they should be going on to a vocational school. But it's not mandatory. You can't make them do it. So we've got to send these kids out of here with some saleable skills. If you eliminate the vocational programs, what would you put in their places. Another thing I think you have to look at, if you eliminate

> these classes, are you going to put these students into language classes or more math classes or what are you going to do with them. You certainly can't give them study halls because they've got as many study halls as they can make right now. I would think that if you would eliminate the vocational classes, you'd probably bury these kids. You'd loose them somewhere along the line. We'd probably loose 5-10 percent of them just through attribution that would drop out. Because there's nothing there for them. And these kids, they have to have a sense that there's something here for me.

Moving Toward Vocational Education Being Appropriate in the Best Sense of the Word

Throughout the notes and observations, there were hints and suggestions for making vocational education's appropriateness a better, more just or fair fit to student and societal needs. These suggestions tend to push what is appropriate more toward what is ideal--what ought to be. While the list is not totally inclusive, it does point out ways of improving matters by studying what is--that is learning some about what ought to be from what is.

Reducing departmentalization. High schools are traditionally divided into departments which can operate as schools unto themselves with little cross communication and curricular planning. As one vocational director notes, "I think we're probably departmentalized in our high schools so much, especially in our larger high schools . . . that the math teacher teaches math, the English teacher teaches English, and vocational teachers teach whatever their subject area without a great deal of interaction in terms of planning for cooperative kinds of projects or stuff like that." Interaction of this kind would insure reinforcement of learning from one class to another and show how each program area can make an important contribution to learning. This need for interaction carries over into more informal settings such as lunch period. As a principal observed,

> Vocational teachers tend to isolate themselves from the staff and I don't know why. All of the rest of the staff will eat lunch down here, and these guys are all down here at a little table at lunch and they don't intermingle with these people. And I don't know whether it's because they feel inferior or they feel left out or they feel they don't have anything in common, but everywhere I've gone it's been this way and that doesn't help anything.

Clear definition of purpose and curriculum. In order for judging if and when vocational education is appropriate, it is important to be clear about vocational education's purpose in the secondary school. As a vocational director noted, "I think part of the problem is we aren't focused on anything specific in the secondary (programs). It looks like we are promising to be all things to all people and we are not." This observation is further aggregated by the frustrations voiced by a school principal.

> I go down to visit a (vocational) class and it's damn hard for me to tell what that teacher is supposed to be doing. . . . I think we need some kind of uniform curriculum so I know what they're supposed to be doing and that there's some common agreement on what they're supposed to be doing. . . . I think the state ought to make a very firm stand in what's taught in every damn classroom that they monitor . . . there should be a guide to those areas.

The suggestion is that a clear and specific statement of purpose with more detailed statewide curriculum guides would be helpful in deciding what is appropriate.

Helping other students understand. Students in vocational education classes pointed out that other students "just don't understand" what is happening in vocational education classes. They reason that better understanding would lead to more appropriate judgments as to the worth of vocational education. As one student put it,

> They don't really know about it. Because I didn't know about it at all. You don't understand it unless somebody explains it to be or unless you're in the class and you see what goes on, you don't really understand it at all.

Students go on to explain why it is that this communication from one class to the next does not usually take place, "Because they usually take it in their senior year and it's usually offered the last semester. And then you can't tell anybody about it because everybody's graduating." More information needs to flow between students taking vocational education and not taking vocational education. Several vocational education students volunteered to help in this effort. Another group who may be effective is former students of vocational education.

Helping other school adults understand. As with students in vocational education, teachers of vocational education point out the need to help other adults in the school understand what vocational education is about in the secondary school. As one vocational teacher notes,

> I don't think people understand what kinds of learning skills that are going on. If you take a look out in a shop class and there's 15 kids running around, it's pretty difficult to walk in on a one day basis and say, "Oh, yes, there's learning going on here." But if you were to sit in on that class for an extended period of time, I think then you could say, "Okay, these students are learning something and getting something out of it." That's the trouble with trying to evaluate our teachers or any teacher. You know, where you bring somebody in to evaluate them and the principal or whoever it might be comes in to evaluate. And he's there for 45 minutes and he's making a major decision on, is there learning going on?

Hopefully the results of the study being reported here will help in the process of helping others understand the purpose of vocational education and the complexities of observing these purposes in practice. As a vocational teacher comments, "We have to do a better job of being understood within the school."

Expecting more from students. Teachers of vocational education should keep open the hope and possibility that students can and will go beyond their probable destinies--beyond their own and the teacher's expectations. This point was made very cogently by a superintendent in saying,

> It probably is true that there are still more of the average but not as academically oriented kids. But when this particular (vocational educational) teacher gets done with them, they've learned a hell of a lot that goes far beyond the curriculum. That's the idea that I have of what a high school program period ought to be. Where you can take kids and challenge them and get them involved in things. And they do things that are far beyond their own expectations, their own belief in themself. That's an ideal program.

In addition to being open as to expectations, and perhaps to providing the challenge to move beyond, vocational education teachers must be creative and demanding of students. As a principal indicated,

> I think that vocational education has lost some of its creativity. The other thing is I don't think they demand in any case as much out of the kids because they're afraid, like the Pied Piper . . . (and) want to get the kids back.

The concern about enrollments at this time requires courage on the part of vocational education teachers to follow through on the principal's suggestions. Teachers are a key ingredient to the success of most education processes in the school. This point was confirmed by a principal in saying,

> I think it all depends on the instructor. If you have a good instructor. . . . There is always the inevitable comparison between the "academic" and the "vocational" classes. I don't see that as a valid argument or position at all. I think it depends on the instructor.

Another principal goes on to say that vocational teachers need to require more of students and put "a little more zip into the thing. . . . And some confidence back in people."

Not overly specialized. Repeatedly school adults pointed out that vocational education in the secondary school should not be too specialized in terms of specific job preparation. Secondary school expectations communicated by a school administrator were,

> I think . . . that the youngster would come out of school with your basic skills and with an exposure to a wide range of interests. They had tried a lot of things. I guess I

> would probably be against seeing kids, or high schools become kind of a specialization period. I think it's too young for kids sixteen, seventeen, eighteen. I think it should be a time, middle school being kind of a forced exploration. Senior high school being kind of an elective exploration.

Vocational educators need to sort out the degree of specialization which is appropriate to provide exploration but not substantially narrow opportunities. This won't be an easy task as revealed by the thoughts of a principal in reviewing the vocational education curriculum in his school,

> I have to be careful that we don't get an over balance of specialization to the point . . . I don't know how much specialization you should have in a high school because I think some. . . . We're after a certain degree of sophistication but not that much.

Attract a wider range of students. Important to vocational education's image of being appropriate for more than a single category of students defined as non-college bound or of lower ability is attracting a wide and diverse group of students. A principal was very direct about this point, "Well, I think we should be trying to attract some other students, a larger cross-section of the total student population rather than just dumping people in there because they either have low ability or no motivation. Attracting a more diverse group of students and the issue of vocational education's image were linked by one superintendent as the means to improving vocational education in this school. He stated, "We can improve it if we in some way get students with maybe a broader range of abilities, or if we raise the esteem of a program in the eyes of everybody--teachers, probably starting with them, and students secondly." Perhaps one of the strategies which could prove successful was described by a counselor as follows:

> Well, I believe that everybody should have some exposure to vocational types of classes. For instance, we push typing real strongly. Everybody should know how to type and that's the truth. So I think it should have a function in every kid that comes through high school, I think, should have some exposure to vocational kinds of courses. I think that it should also be left open enough so that some students can have a lot of exposure. Other students can have much less exposure based on their own goals. That they should not be limited or trapped.

A counselor in another school seem to model this approach in his vision of the ideal high school program and process of assisting students with their own course planning. Review the following interview transcript:

> Interviewer: Who do you think that vocational education is serving in this school? Which students? How would you describe them?

Counselor: I guess I would have to have looked at all the schedules but just in shooting off the top of my head, I think just about every student in our school has had some exposure beyond the ninth grade, where it becomes strictly elective, has had some exposure to our vocational courses. So I guess I would have to answer that in a broad way, I think it's serving everybody . . . I'll show you an example of just exactly what I'm talking about. Here is a student that to me has just an excellent program. It represents just about everything that we offer in our school. . . . He is a good student. He has accelerated English. He has his math, the algebra as opposed to general math, geometry, ecology. He's got typing. He's got metals. He's got wood shop. In his eleventh grade year again English, advanced algebra, computers, machine work, went over to the vocational center for auto mechanics. And that year he has English, I think senior math, chemistry or physics. He was an aide. He's on our work program. He represents the best of all worlds. There, again, if he had band or choir in there, to me he would have total exposure to everything we have to offer.

Postscript

I don't think they are all of the same kind. In ag I see probably a minority of very good students--they are very responsible, very concerned, and interested people who will be good farmers, good businessmen. I see others who have not been good students in other subjects and they are probably not extremely good students in ag courses either but who enjoy it and they're getting something from it. I know in our school I think we have a teacher who is able to take a student who is pretty nonacademic and still get quite a bit of participation from that student. (Principal)

CHAPTER XIV

GIVING MEANING TO SCHOOL*

We readily assume that vocational education courses provide students with basic information and skills. But exactly what is "basic" knowledge? As the teacher maps knowledge into a class experience, and as the students begin activities upon it, to what degree does basic knowledge retain its shape?

If we were to look at a map of our country some of us would focus on particular cities or locations. Others would let their eyes travel along roads of interest. Still others might concentrate on symbols for terrain or climate. In an analogous manner, we found that students create individual meanings out of the "basic maps" of class experience.

This meaning often was based on immediate interest in the topic or on the perception that the information will meet current and future needs. Although certain ideas generated in vocational education courses seem to strike students as meaningful, the exact points where content becomes meaningful differs radically between students.

In this chapter, a variety of immediate interests and problems which vocational education courses help fulfill and solve will be described. We first will explore the meaning of school from the students' points of view since the theme arose primarily from their comments. Although these particular meanings often elude the teacher's knowledge, we also will show how teachers actively attempt to tap into immediate student interests in order to enliven course content. A prominent function of giving meaning to school is student motivation, will then be addressed.

Fundamental Student Interest

We found that initial registration in vocational education subjects often is prompted by strong existing interest. When we asked students why they took a class or how it was meeting their needs, this a priori interest was very evident.

> I've always liked playing with motors and stuff, and I got a car I always tinker around with . . . take the motor out and tear it apart and paint it and do all kinds of fun things to it. I really like doing that stuff.
>
> Because I've always loved office work and (business education) is perfect for me.

Although it seemed like vocational education specialties were most compelling to students who already had developed related interests, we also found

*Theme author was Marsha Rehm.

that naive entrance into class can spark and expand new interest. Sometimes students who initially enroll "for the credit" unexpectedly discover that a class offers interesting and relevant ideas. Exploration into a possible career might even emerge if a student becomes interested in various skills and roles experienced in vocational education classes.

Visible practicality. A striking aspect of finding meaning in school is the way students were able to meet what they consider to be "practical" needs. The following quotation by a counselor reflects a common opinion that students see a tangible use for vocational education content:

> In vocational education there is more practical carryover into everyday life. You can use the math for your cooking budget, or you can use it in minding your money and looking at how much money you're going to make. . . . "What do I need to know to buy a car or rent a room or raise a family?" Those are real practical.

Sometimes students were able to work on personal projects in vocational education classes. Students in auto mechanics class were allowed to apply principles of repair to their own vehicles. One student indicated appreciation of this mode of learning.

> Now we are working by ourselves. Stuff like that makes it feel more important too. You can work on stuff yourself. You can bring anything in. I bring my car in and I work on it. . . . You are to yourself sometimes, but you've always got someone there to help you too.

While cases in which students completed personal projects to fulfill class requirements were unique, classroom learning often was transferred into practical situations outside of school. Many students intended to use the skills to help out their families and offered some rather interesting variations of this theme.

> I used to have a housing class and it was doing blueprints and all kinds of junk like that. I'm going to help my dad build a cabin and I helped him lay the blue prints.
>
> I work with my dad on a race car. I pit for him during the summer. But I'd like to learn more about it for later on when I get a car, if something breaks down.
>
> My mom runs 20 acres. I want to learn something about farming and how to use a welder so if something breaks down, I can fix it.
>
> Last year (in agriculture) we were learning how to weld and it helps me at home now. . . . We just bought a welder. Now we can do our welding instead of taking it into a shop. The same with the gas engines. Now we can fix them because my brothers are taking mechanics up in school. We all three work together.

> I want to get the feel of the computer because my grandpa's got one. He just got it so he's kind of lost. I just kind of took the (agriculture) class, so I can show him a few things and say "This is how I was taught. Now here's what you can learn".
>
> My father died when I was a year so I kind of (benefit from family life class) because I never had a father image to look up to.

Even psychological complexities sometimes become compelling forces that make classes relevant.

> When I first came into ag I joined because my brother was there and I want to be better than my brother. It's just a thing in my family since my brother died. My one brother was just totally dominant. Everything he does is absolutely correct, and I wanted to finally beat him at something.

While the above situations reflect immediacy of interest and fulfillment of current concrete or psychological needs, students also are filled with anticipations about their futures.

Link to the future. Future visions were often naive and occasionally sophisticated, but relevant links were perceived between their present vocational knowledge and future hopes.

> I'm going down to California after school. I'm going to live down there, and I'm going to get a car. And I want it to look nice, keep it up.
>
> On my program I was making a machinery record file. Everybody else is either making a record for their Christmas cards or birthdays. But I feel this machinery record file is useful not only to me, but maybe if I make enough of other kinds of programs, I could sell a disk. And maybe down the road somebody else will either have use for it or want to buy it. . . . That's tangible and has a use, and it's not just a game.
>
> (I'm taking agriculture because) I've got our farm. My brother doesn't want to farm and I'm the only boy left. I want to learn more about it and stuff when I take over.

Students connect relevant personal meanings to basic skills, ideas, and knowledge presented in class. Because they base this meaning on unique interests, practical needs, and future dreams, the class experience is very unique to the individual. Teachers also consider these immediate and relevant interests as potential launching points toward learning, but it is difficult to predict how any one student will utilize class learning.

Teacher Directed Relevance

While teachers indicated that providing meaning for students was important to learning, they varied as to the degree to which they consciously formed their courses around immediate student needs. Some teachers explicitly planned lessons so activities would be relevant to student concerns. The perceived student needs became an actual focus, helped dictate course content, and determined how material was to be presented. Because of a unique philosophy that development of self-concept is most important, an auto mechanics teacher structured class so students could fix their own cars. He believed that relevant tasks to fix parts of their own cars would help students feel successful, feel good about themselves, and be more eager to study abstract theories explaining concrete problems.

> One of my primary goals in this class is for them to have the feeling of self-confidence that, hopefully, will spill over into everything else they do. You know, they feel good about themselves. Positive self-image. That's part of it. So I want to make sure they have successes. . . . If they can say, "Yes, I know how to tune up a car" and "Wow, I tuned up my buddy's car," that's good for their self-image, their feeling of self identity. It is a vocational course so hopefully some of them will be mechanics. They get their basics here in this class. But I'm not concerned about them being mechanics. I'm more concerned about them feeling successful. Doing the job. I give them a job to do.

Even though most teachers were equally concerned with student self-confidence, this teacher was unusual because it became the principle which shaped the entire course.

We saw other teachers present material themselves before attempting to elicit student input or in other ways make the content relevant. The following observation occurred during a business education class lecture on the effects of work termination:

> Students were using an agenda to fill in subpoints with notes. When she got to the end of effects on different people and business, she said, "Well, that's the end." She said she had covered some important points and asked if anyone had experience with voluntary or involuntary termination. Mary volunteered that her boss "just told me to get the _____ out of there."

We saw many similar instances of teachers questioning students in an effort to increase the meaning of school for students. We observed a distributive education teacher questioning students who had worked in receiving about its function in business. After one student indicated he worked at Bakers Square, this teacher further probed about the restaurant's receiving policy when pies were delivered broken. Other teachers encouraged students to apply class information to related situations they might find outside of class.

Although teachers used a variety of techniques to increase relevance, we might expect teachers to confront difficulties when they try to appeal to the wide variety of student interests. A home economics teacher told us students did not always see important concepts as relevant.

> I get kids that come and say, "What am I ever going to use this for? I'm never going to need to know this." I want my kids to see why they might see some relevance to their lives. Maybe right now they are going to say, "I don't need that," but they can see that at some point in time they might need that. Right now they may not be a parent, but that's something that's going to happen, so let's at least discuss it and apply it to where we're at and what we can use it with.

Although teachers hope and plan to make classes meaningful and relevant, the above statements reveal that teachers might not always be successful. It is difficult to tell how congruently the students' and teachers' viewpoints match. Because the auto mechanics teacher purposively organized his course around what he considered to be meaningful for students, it provides a perfect situation with which to explore this question.

Student and Teacher Ideas of Relevance

It is difficult to know if students really do gain more self-confidence and more subject matter understanding by working on their own cars than they might through other activities. While the auto mechanics teacher firmly believed they did, he simultaneously implied that "too much" immediate interest might be detrimental to academic achievement.

> Those students who don't bring in their cars and who work on the shop car usually get the grades because they're not distracted. They don't waste all that time trying to get that rusty bolt off their car. The shop car comes apart easily. They stay on task.

The teacher also admitted that he sometimes "gave in" and allowed students to bring in their vehicles for repair work not explicitly required for class. One one hand, we might suspect that some students would take advantage of the chance to get their cars fixed--at the expense of overlooking other knowledge. On the other hand, students overwhelmingly confirmed that they had gained self-confidence and skill from successfully fixing their cars.

> I'm sure (auto mechanics) could come in handy. . . . In case something would go wrong with my car later on I just would probably try figuring it out myself. Fix it up if I could.

> (This class is) to teach people not to get ripped off by the car companies, the repair shops. To teach you how to fix your own car, save money, just general help. So if it ever breaks down you at least know what to try. It can help others too. If they have something wrong and they don't know

> anything, and you're a friend of theirs, they call on you. Then later on, you're building a house or something and they're a carpenter, and you call on them.
>
> In Spanish we had to identify the parts of the car and I knew them. In chemistry you have certain mixtures--gas, fuel, and air mixtures, carbon monoxides. Things like that I knew. . . . That's kind of how I passed some of the tests. If I can hook something up with a car then I'm fine.

These comments might remind us of the map analogy presented at the beginning of this chapter. The teacher explicitly mapped out course material and experiences with the conviction that immediate student meaning would increase self-confidence; each student seemed to adopt bits and pieces to build an individually meaningful map. If teachers actively incorporate meaningful experiences, they indeed might generate student self-esteem and feelings of success.

Perhaps the important point is that the same content materials are flexible enough to meet many unique modes of meaning which in turn leads to student motivation. Because this is a critical issue in education, vocational education's contribution to motivation should not be underestimated.

Motivation

We might question whether consuming student interest is always a beneficial sort of motivation, especially if a powerful interest such as fixing one's car precludes other class learning. But counselors, principals, directors, and teachers seem to view it differently. When certain students can "zero in" on a timely interest, they believe that motivation increases. Students who are spurred by such motivational forces will subsequently enlarge their education.

A general feeling was that students who see no meaning in school find it to be an impossible system. However, there is hope that finding meaning in even one vocational education class will contribute to general motivation in school.

> They need the flexibility in my class in order to survive the other classes where there isn't a whole lot of flexibility. Mainly because we have pretty wild personalities . . . not wild but very out-going, gregarious, congenial, social. Now if they had to be put in a traditional track where they couldn't say "boo" all day, they would not function well at all. They would not have any outstanding areas because school would not mean anything. To them, it would be like prison.
>
> A good vocational program, many times, will motivate some of those kids who may no longer even want to be in school. We see some kids with very low interest in the structured type of regular classes but who may well have an interest in auto mechanics or ag mechanics or whatever. So, consequently, they stay in school longer.

Vocational education courses also motivate students to apply theory, basic math, and English skills because they are needed to solve immediately interesting problems. This was viewed as "clandestine" motivation because students didn't realize that they were integrating the same material they found dull in other types of presentations. A vocational education director explains it this way:

> There needs to be a way for young people to try out some of those theories, make some mistakes, and do it in an educational setting with people that know and care. As they move along in their education, whatever they might do in the future, then they'll have both things in their back pocket . . . a knowledge and a skill that they can apply. I think that's the role of vocational education. It strengthens your basics. Once you see a reason for using your mathematical skills, or whatever it might be, then it becomes more meaningful.

A principal adds,

> Maybe that comes back to the opportunity that it gives them something that has immediate and relevant feedback to them. You can take a kid that is factoring in an Algebra II class and really sees no practical application for it other than, "When you get to calculus you're going to have to able to factor." If the kid is in a word processing course, can actually type a theme into the word processor, and can watch that printer give him a clean copy, and can go back and edit it or correct it, that's much more immediate feedback. That's an opportunity I think kids can get in vocational classes.

Finding immediate meaning also motivates students to begin planning their futures. While none of us are able to accurately predict how current experience will relate to the future of individual students, this general purpose was clearly perceived as important.

> It's a course that they enjoy. They took industrial arts in the 7th grade and they liked that so they took something else. Then they take metals in the 10th grade and then all of a sudden they say, "I'd like to try this machine trade," not knowing what it is until they get into it and then they go, "Hey, this is a whole industry." They really don't know that when they get in there. And I see that a lot . . . kids take our auto mechanics course, they want to fix a car. They find out that they're good at it and that they like doing that. It opens up the whole concept of part supplies, auto dealership, repair and maintenance, just all kinds of things. . . . Taking care of these lease cars, maintaining lease cars is a big occupation now. But you don't know that, you go over there and fix a car. A kid has a beater and he decides

> he wants to take auto mechanics to work on it. Then as a result, he winds up in a career.

Students tended to identify links to their futures in a direct and concrete manner, overwhelmingly supporting the perception that vocational education content stimulates action toward future goals. One student told us,

> (I'm taking business education) because I like the job that I've got with it. The job is really nice because I can leave school and go to work and have my evenings off and my weekends off. And I like business. It's gotten me to go into a major of business in college next year. I think its interesting typing and everything, so I think it's fun yet educational.

This student evidently discovered several meaningful ideas about her job and her business course. She found a career area that offers "fun" education, and a future goal. This is a unique situation for a unique individual, and surely other students in this class see it differently. But even though the way content becomes meaningful and motivating is unique to each student, we might summarize the idea of relevance with some general themes.

Vocational Education Becomes Meaningful in Student's Personal Maps

We might think of each student as having a personal map of interests and needs. A teacher similarly frames a course map and fills it with vocational education content, content that hopefully overlaps or connects with a portion of the student's personal agenda. At unpredictable points it provides a "magnetic core" that attracts and motivates particular students.

Various meanings may take prominence at various points in time and in different ways for learners. Some students are drawn to a course simply on the basis of existing interest and some "discover" meaning during in-class experience. Others absorb knowledge or skill gained in class and later apply it toward meeting home and personal needs. Still others envision ways that current learnings will be relevant to future lives as consumers, family members, or workers.

Some concerns are concrete such as the need to fix the brakes on one's car. Others are more intangible such as learning about the work world. What is meaningful might even be invisible as students "unknowingly" engage in abstract math or critical reading as they work out salient problems. But students become motivated to succeed when school becomes meaningful.

Most vocational education teachers try various means to make their courses meaningful to students. They relate questions to student interests, design coursework around student needs, and suggest possible applications. Although such techniques often help students appreciate the course material, many students surprise us in the unique ways they focus or utilize class ideas.

Postscript

I want my kids to see why they might see some relevance to their lives. Maybe right now they are going to say, "I don't need that," but they can see that at some point in time they might need that. Right now they may not be a parent, but that's something that's going to happen, so let's at least discuss it and apply it to where we're at and what we can use it with. (Teacher)

CHAPTER XV

CONSIDERING FAIRNESS IN SCHOOL*

Equity is an abstract concept that is very difficult to get a handle on--especially when we go into classrooms to identify observable instances of it and when we talk with people in the hope that they can articulate their "equity experiences." However, that's what we tried to do, and this chapter presents some of our findings. This chapter is a condensed version of our considerably longer monograph, "The Practice of Equity: Access to, Treatment in, and Outcomes of Vocational Education in the Secondary School." (Plihal, Ernst, & Rehm, 1986).

Meaning of Equity

A major distinction to draw in a discussion of the meaning of equity is that between equality and equity. Basically, the concept of equality refers to sameness, equalness. Applied to education in its strictest sense, equality assumes that students present just about the same abilities when they enter school, that they should receive the same or equal educational opportunities or treatment in school, and, therefore, that they will all achieve the educational outcomes desired by society.

The concept of equity refers to justice, fairness. Underlying the notion of equity in education is the assumption that students are both alike and different. When they are alike in educationally relevant ways, they should be treated equally. When they are different in educationally relevant ways, they should be treated unequally. Perhaps the greatest problem in applying equity to education is to decide which variables are educationally relevant. There seems to be spoken agreement, backed by federal and state legislation, that sex, race, ethnicity, age, and handicaps are not educationally-relevant variables. That means that regardless of students' sex, race, etcetera, they should have equal access and opportunity to benefit from educational programs. Where this position falls short--from the equity standpoint--is that in order to realize the benefits of an educational program, some students might need unequal treatment. They might need, for example, extra attention from the teacher in order to learn to perform certain tasks at which other students are already highly skilled because they experienced a different socialization process which included the development of those skills. Equal treatment in this case would be inequitable. Unequal treatment is not only justified but also demanded when it enables students to experience their basic human rights and liberties and when it moves them in the direction of living a life of meaning and dignity.

This, then, is the concept of equity which we used to analyze our data. Our analysis of equity in vocational education is divided into three major

*Theme author was Jane Plihal

parts: access to vocational education, treatment in vocational education classrooms, and outcomes of vocational education.

Access to Vocational Education

Our concern about access is: Who get into vocational education and why? We begin our discussion of this by summarizing opinions about the role of vocational education in the public school system. Then we identify forces affecting enrollment in vocational education and examine the sorts of students who actually gain access to vocational education.

Role for Vocational Education in the Public School

People who are involved in vocational education believe that it makes an important contribution to the total school. Administrators, teachers, counselors, and students all expressed a belief that vocational education plays a significant role in the school.

Administrators frequently used the word "comprehensive" to describe a high school with a rich array of course offerings, and they indicated that the option to take vocational courses adds vitality to the school and society. In the words of a principal,

> Public education's task is to educate all of the children of all the people. And, therefore, we offer a variety of educational opportunities for students. The vocational education section of any curriculum is an integral part of the overall school curriculum. . . . I don't think vocational education is any more important or any less important than any of the other kinds of opportunities we try to provide for kids because we must meet such a variety of needs.

Further, administrators said that vocational education broadens students' experiences, provides challenges in technical and interpersonal domains, introduces students to options and subject matter of which they might otherwise remain ignorant, meets specialized interests, provides variety from purely "academic" courses, and provides students with more immediate feedback than do other courses. The following excerpt from a counselor's interview highlights ways in which vocational education enhances students' alternatives:

> I think it's like going to a smorgasboard. You have to pick and choose what you want. I don't think it should be restricted to any kind of people. I think kids should be able to choose vocational kinds of programs and pre-college. This is the route that our counseling staff works on. Don't entangle yourself up into one thing. Try a lot of things so you have when you leave two or three different routes to go.

Several students also felt that vocational education contributed to the whole school. Some even felt that the particular class in which they were enrolled should be required of all students. A student in an agriculture class said,

> I just think (agriculture is) one of the most important classes anybody could take. I mean, if I had my way, it would be mandatory. Because it's important to learn about your environment, your surroundings. Not just the farm animals and things like that, but where do you get your food? Why do you get it? How it's made. . . . Everything kind of relates to ag and if we don't have agriculture in a sense we really don't have a lot of things.

No one we talked with said that vocational education did not have an important function to serve in the public secondary school. But we were more interested in their views of how those functions actually played out--and for whom.

Access: How Free? How Constrained?

Many of the administrators and counselors equated freedom of choice in selecting course offerings with equity of opportunity. They said that those who need vocational education have it as a choice; those who do not need it will voluntarily keep their distance. Although this gives the impression that a free market operates in school, we found that what appears to be free choice by students actually is choice steered by some powerful forces.

National trends. Several national trends seem to be affecting access to vocational education at this time. Many of the adults we interviewed identified the current reports on the quality of schooling as a major influence on vocational education enrollments. Their perception is that the loud cries for increased academic standards and increased academic course requirements are discouraging enrollment in vocational education classes and changing the allocation of resources within schools--decreasing the number, variety, and quality of vocational education classes a school offers. It isn't that vocational education has become a curricular ghost yet, but that it is like a step sister getting less favorable treatment and feeling afraid she won't be going to the ball for several years. One principal expressed it this way:

> With all the emphasis nationwide now on a basic core of subjects that everyone has to have, I think that there is a diminishing effect on vocational education. . . . (Interest of students) is going down generally, I think, as a result of Nation at Risk and some of those national reports. At one time we had those national reports coming out that said that our young people don't have enough vocational experience. . . . so it swings.

Another principal said,

> More recently we've been looking at trying to emphasize the more difficult academic things because of all this talk about excellence, Nation at Risk, and all that. We've incorporated what we call an academic honors diploma which is based on taking so many credits out of specific lists of courses. . . . They've been chosen as the ones you tend to think of as

> college preparatory courses. . . . Basically, vocationally-oriented people are the ones that question it because they feel it might be detrimental to their program if students get the idea that science and language, history, are more important than ag, industrial arts. . . . They seem to think, "What's wrong with my course?"

Some vocational education teachers believe that their courses are as "academic" as any others offered in the school and are fighting a stereotype which places less value on vocational education courses. For example, an agriculture teacher said,

> I feel so strongly about it that when this school moved to an honors diploma and made a list of classes in group one and a list of classes in group two, and students who definitely wanted to get an honors diploma rather than just a regular graduation diploma had to select three classes out of group one and five more classes out of group two. And none of my ag classes were involved in that. I challenged that as far as I could challenge it.

Fewer resources for vocational education, according to administrators and teachers, means that schools are less able to buy new equipment for vocational classes and to underwrite teacher inservice. Without up-to-date equipment and teachers, vocational programs are less likely to be attractive to students who could benefit from vocational programs. For example, one superintendent said,

> If we could just ignore the cost, if I could be able to have unlimited word processing equipment, unlimited computers, calculators, and so on available for the business education and accounting department, I think that we would do a better job here. I think we would also attract a new group of students. . . . we would attract some highly skilled students.

Vocational education teachers definitely are feeling growing constraints. A decreased school-age population, increased national attention to academic subjects, increased academic requirements to graduate, and special incentives to enroll in academic courses are phenomena that intentionally or unintentionally screen students out of vocational education. Further, these phenomena fuel a strong and serious campaign to recruit students back to vocational education. The competition is not just between what are generally considered the academic courses and the vocational courses, but also among the vocational courses themselves. In practice, access is partially determined by aggressive student recruitment and hardsell marketing strategies. A counselor told us,

> Everything is being cut. And every department in this building is fighting to maintain enrollments. . . . If you have fewer kids you're going to have fewer staff and you don't like to see your colleagues being eliminated. And we've been in a period of hard times. And it's going to get

> tougher. . . . All of the departments are trying to make their subject areas attractive and trying to attract kids.

Students are not naive about the raging competition for their presence. Although our study doesn't tell us much about how teachers actually approach students and which students are selected for approach, we found suggestions of teachers promoting their programs by featuring perks which come from related extracurricular activities. Listen to this student whose teacher used a regional student organization competition as a carrot:

> Mr. ___ is trying so hard to get me. I didn't want to go to regionals and one of my friends signed up for it, registered for it, and (the teacher and my friend) more or less attacked me saying, "Oh, you've got to do it. . . . When we go to state it will be so fun downtown at the hotel." And I'm going, "I don't want to do it. I don't want to do it."

As it turned out, this student did perform and "place" at the regional competition, but then was faced with further appeal from her teacher to take an "on the job" class next year,

> Mr.___ said, "Are you going on the job next year?" And I said, "No." And he said, "Why not?" And I said, "Well, because I'd rather stay in school rather than going to school for three hours and going on the job." He says, "We've got benefits with this. . . ." And I'm just going, "Mr.___, I don't want to go on the job." And this was about a month ago. . . . I probably will not take it, but I keep thinking about it and thinking about the pros and cons, and I don't know.

All of us in education must question whether we are recruiting students to our programs because we believe our programs will benefit the students or because we want to maintain a certain head count and thus our jobs. Is student welfare at the heart of our recruitment efforts? Are the concepts of "forced access" and "overaccess" operating in some of our educational practices? If so, with what effects?

In addition to these national trends which are affecting access to vocational education, there are some influences operating at the local school and individual student levels.

Local and individual influences. One of the local influences is the extent to which the community's norms and values are supportive of vocational education. A teacher commented,

> I think (we have) good support from teachers, administration --very much so. I think they're happy with the program. And even in the community things are going well. That's probably why they're so supportive.

Vocational teachers think that school counselors play a pivotal role in

deciding who goes where at registration time. Some teachers felt that counselors directly steered students away from vocational education courses, and some suspected that counselors merely didn't mention curricular options in vocational education. A distributive education teacher said,

> I think everybody needs to be served in the manner that best fits them within this school. . . . I also sincerely feel that there's a lot of kids at the high end, the high middle, and all the way down to the low who could strongly benefit from a marketing program if they have appropriate career goals already identified. And a lot of them do. But some of the counselors try and talk kids out of programs.

In contrast, other teachers think that the counselors in their schools encourage enrollment in vocational classes.

> I feel the counselors support us and encourage kids that they feel specially geared towards vocational kinds of programs.

Among the students we surveyed--students actually enrolled in vocational education classes--the majority remembered counselors giving them encouragement to select vocational courses. Counselors' influence can be powerful--as illustrated in the following comments by a student:

> My counselor told me to take (this course). He explained it to me . . . but I wouldn't have known anything about it. . . . He just said it was the most important class that I have. . . . It would look good on my college references or on a job application saying that I had this training in school.

Although counselors can have some effect on who enrolls in vocational education classes, even they feel that their influence is sometimes overestimated. One counselor told us,

> I hear it all the time from our staff. "Oh my, that student was in the top five. Why did he go to vocational education when he left school? Why should he do that? He should be going to college. Why didn't you encourage him to go to college?" Good grief, I'm only one person here that has an imprint on people.

Students also identified their peers as affecting their decision to take a vocational education class. Advice from friends such as, "Take it. It's fun." was heeded by some students. Students also cited teachers as being influential even though they didn't always follow their teachers' words of wisdom.

Students indicated that their parents' and siblings' encouragement to take vocational education classes was persuasive. A student in an occupational foods class told us,

> This is what happened. My sister took this class and went to TVI (Technical-Vocational Institute) and graduated from TVI

> two years later. Now she's a supervisor. She went up two weeks ago to apply for prep cook. They found out what she did in high school and they asked her if she wanted to be a supervisor. So I thought that was kind of neat.

Another student who was in a business and office education class said,

> My mom is really glad about my job because I'm going to nationals for this competition that we were in, and the company that I work for has a branch out there. I'm going to tour the branch when I'm out there. They asked me. I was really surprised. So my mom is really glad about that.

In addition to acknowledging the influence which friends, family, counselors, and teachers play in students' course selections, we also need to point out that students themselves are part of the formula. They are not merely pawns on the curriculum gameboard. The student who made the following comment took a vocational course in spite of her teachers' coaxing:

> These (teachers) ganged up on me because they weren't too happy because I was getting an A and everything. They said, "You have your whole life to work." Well, how am I going to be able to work if I can't get myself through college?

Given all these factors affecting the likelihood of students enrolling in vocational education courses, who actually ends up in them?

Access: A Crossroad for Sorting Students

Although high school students who intend to go to college have a choice of electing vocational classes, generally they don't or they enroll in only one or two. Administrators, teachers, and counselors--while acknowledging potential benefits of vocational education for all students--told us that, with a few exceptions, vocational education is serving non-college bound students. These students seem to be of several sorts which are not mutually exclusive.

The doers. The largest group of students served by vocational education according to administrators, counselors, and teachers is a group of middle or low academic ability students who are thought to be more capable of learning with their hands rather than their minds. A counselor described this group in the following way:

> I would guess that the ones that take more of the vocational type courses perhaps would be lower on the academic aptitude ladder. . . . Kids that cannot untangle the advanced algebra problems in their minds can be very, very skillful with the shop tools and the metal tools and what not.

A teacher described these students this way:

> You'll find kids that are mechanically-oriented who can work with their hands but they can't work as far as reading or

> writing. It's even difficult for them to sit down at a desk and do something. We see it all the time in mechanics.

A student said, "It's more of a skills class than a mind class." And running throughout descriptions of this group of student is the Aristotelian notion that thinking is better than doing. A vocational director said,

> There's a class system in our society if we want to admit it or not of the thinkers and planners versus the doers. And many people think that there's a higher status of being a thinker and a planner than there is being a doer. And yet that's the majority of our society--it's comprised of doers. So I don't know which is the cause and which is the effect, but I think somehow we have to come to grips with that--that people do things in the world for a livelihood and that's what your occupational and your vocational programs are about--teaching people how to do things with the knowledge that they've gained.

The sluff-offs. Another category of students served by vocational education are those who are considered sluff-offs in the school. These students are perceived as unmotivated to engage in schooling activities and as wanting to fulfill graduation requirements with as little effort as possible. A principal described students who were in a particular class which had a reputation for not requiring much of students.

> My suspicion is most of them are non-motivated kids. It's a nice place to spend the hour and sit there with your little piece of sandpaper and sand for 55 minutes and put your project back and not even have the teacher look at it.

Some students themselves are not pleased that other students take vocational courses because they think they don't have to work in them. One student who was in a course that involved leaving the school to work on a job said,

> Now, if you haven't noticed, there's some people in that class that just take it to get the heck out of school. They screw around. I won't mention names. But, ya, they do it to get out of class. And to get out of other classes. It's as simple as that. They want to go sluff. But I took it because I'm not going sluff. Ya. It's nice to get out of school early, but yet I'm working my tail end off.

However, sometimes students' expectations and hopes are not realized. A student in a family life class who admitted that he chose the class because he thought it would be a "sluff" and he wanted some relief from in his otherwise rigorous schedule was surprised that he found the class interesting and worthwhile.

> I actually took it because it was going to be a senior sluff class. Lay back. Take it easy. But then once you get into it . . . it's really getting interesting. Because you learn so much. You think, "Wow, that's me, and that's not me."

From a school's point of view, vocational classes sometimes are viewed as places to "dump" students who are unmotivated or who present disciplinary problems. A superintendent said,

> Vocational education better be serving the kids. Realistically, I think it also serves schools. It provides a place to put some kids who choose not to function or are having difficulty functioning in some of our more advanced courses. . . . Vocational programs do provide a structured opportunity for kids who aren't college bound. That ought not to be the basis for offering the programs but it certainly is on the mind of a lot of schools.

The most damming remark we heard came from a vocational director who said that a principal told him that vocational classes were "a place to send all our eight balls."

The disciples. In contrast to the sluff-offs, some students enroll in vocational classes because they are interested in certain vocational areas and want to learn more about those areas for either vocational or avocational reasons. Within this group are a few students who plan to go to college--studying in a vocational or other area--and other students who do not plan to go to college. For example, agriculture teachers can readily point out which of their students plan to farm, which plan to go into an agricultural program of study at a post-secondary vocational institute, and which plan to study agriculture at the University of Minnesota. Teachers in each of the other vocational areas can do the same for their respective fields. These students are the disciples of vocational education; they are the content of our success stories; they are the source of some of our most important rewards. The following excerpt from an interview of business education teacher is evidence:

> Sometimes you'll get good A students who are very sharp and I can think of an example here where I had a girl. . . . She finished high school. A straight A student. A and B. Strong A and B. And she went on to Donaldson's. Worked there full time. Then after a year she started going to . . . Normandale (Community College) part time. Then after letting the company pay for a lot of her tuition, then she finished up at . . . St. Cloud (State University) and now is in marketing and sales. . . . And then I had another fellow. . . . He's one of the few boys I had. He wanted to be an accountant. So I got him a job at the Diary Queen. He was working in the accounting department, and today he's a CPA for General Mills. . . . And then another fellow that I had--I had him working for an insurance company. And they had him do a variety of things. He had a lot of skills. Office skills. And he went on to school and now he's working for a big insurance company. But he knew what the insurance business was like. He got that exposure.

The special needs students. Vocational programs also serve special needs students--students whose handicaps and economic and academic disadvantages create special demands on learning environments.

> The shop people and the vocational people are very cooperative in allowing these (special needs) people into their classes where, obviously, to put them in the chemistry class it would be a total maze to them. They work them into the cooking classes or sewing or shop classes, or horticulture. They get exposure that they need and is a great benefit to them.

We noticed that some teachers feel overwhelmed by the number and variety of special needs students who are "mainstreamed" into their programs, and sometimes they feel taken advantage of. A vocational education director told us,

> One concern that I get from some of the teachers is they get what they consider a rather high proportion of special students and only in a few cases do they provide any sort of special help with that. . . . Just recently a supervisor of special ed was talking to me about the teacher in one of our high schools who does have a kind of tutor, but the teacher is saying he gets a rather high number of kids who are special--more than he thinks he should be getting.

The genders. Once students are sorted to vocational education, some further sorting within vocational education goes on along gender lines. Although most vocational educators agree that gender isn't a relevant variable for determining the vocational skills and interests a person develops, we found that male and female students tend to enroll in vocational classes traditional for their gender. According to a vocational director,

> Let's face it. I just got the evaluations we had in February. . . . Almost universally the evaluator was complaining about the fact that in junior high there were quite a few boys in home economics and in senior high there just weren't. I guess you can complain forever. You can make it available. You're not going to change what the kids do.

And a principal said,

> You always get into the thing of sex: Do we get enough girls into our agriculture or mechanics type classes? . . . There is no constraint. They can sign up if they want, and they're encouraged to do so. We just haven't been very successful.

However, some of the people we interviewed felt that vocational education helps promote less sex-stereotyped career exploration and selection. A counselor explained,

> Women and men can do a variety of different tasks, and you don't have to limit yourself necessarily based on what has gone on before in terms of stereotyped . . . career types of experiences. That women can be auto mechanics and men can go into home economics and find very worthwhile types of careers. I think vocational education helps promote that.

Another counselor pointed out that some progress has been made.

> I think the (vocational programs) do a marvelous job of providing opportunities for all our students. I suppose you could go into our home ec sections and foods sections and say, "Gee, there are more girls in here than there are guys. Why's that?" But on the other hand, there are guys in there and there are more guys in there today than there were five years ago.

If these are the students who actually gain access to vocational education--students generally not college-bound who are at the lower and middle ranks of the academic pecking order, several students who are not motivated to achieve in school, some students who have identified special interests in vocational areas, many of a school's special needs students, and students who tend to follow traditional gender-role definitions--what do they experience in vocational classes? To what extent and in what ways are students treated equitably in vocational education classes?

Treatment in Vocational Classes

Our description of equitable or inequitable treatment in vocational classrooms focuses on how students gain access to knowledge provided in these classrooms, and on the quality of interactions between teachers and students and among students in these classrooms.

Absence of Discernible Discrimination

To begin with, we can say that we observed only one instance--a behavior of a substitute teacher--of what we consider to be discrimination. Systematic discrimination against students because of their gender, race, ethnicity, handicaps, socioeconomic status, cognitive ability, or any other observable characteristic was not apparent in the classrooms we studied. We found that teachers varied their behaviors, instructional materials, learning experiences, and evaluation of students according to students' learning needs, styles, and interests--not according to educationally irrelevant variables. We identified six ways in which vocational classrooms give students a "fair shake" and help them benefit from their schooling experience.

Equitable Treatment: Increasing Opportunities, Decreasing Barriers

Providing a niche. One thing students told us fairly consistently was that vocational classes provide a place where students can "be yourself." It's likely that some students who feel they don't fit very well into other classes feel like they find their niche in vocational classes. One student explained vocational classes this way:

> You're not always sitting down--in other classes you're always sitting. And there is a lot of paperwork in other classes. There is some here but not was much. And you get more active. You get to be yourself. You don't have to put on an impression or something.

Part of an explanation of why some students find vocational classrooms less alienating than other classrooms might be the egalitarian atmosphere which seemed characteristic of all the classrooms we observed. The teachers we observed rarely lectured; they most often were coaching, facilitating, trouble shooting, and working alongside students. We saw many instances where students were asked to make decisions about significant class procedures and projects.

Developing a sense of teamwork and a feeling of being needed. We were struck by the amount of cooperation and teamwork which the students displayed in these projects. Students were cognizant that the success of their group work--whether it be a food service class serving 80 meals at lunchtime or a graphics class producing thousands of graduation announcements--depended on everyone doing his or her part. And this spirit spilled over to students' relationships outside of class. For example, a student told us:

> At first I thought that I was going to come in here and I wasn't going to get along with anybody because I didn't really know that many people. And I came in here and I just started getting along with everybody and, I mean, it kind of seems like everybody is a big family in here. When something happens, you know everybody else knows about it and everybody else cares. Even if it's a kid that's not popular. Like Joseph when he got his finger stuck in that press. He's not really popular with a lot of the guys in here. . . . But I mean everybody cared. Everybody wanted to know what was going on. And I went up there and saw him after second hour, and there were two or three other kids up there seeing him. So you know, people, everybody sticks together in here because everybody knows you have to or else nothing's going to work.

Turning students on. Another way in which vocational classes enrich students' experience in school is by "turning them on." As we mentioned in the preceeding section, many students in vocational classes are generally unmotivated by school. Vocational education helps erode some of their apathy by providing varied modes of learning and by offering learning activities which students perceive as purposeful and relevant to the lives. Listen to this student in a graphics class:

> I'd describe it as a class where you do a lot of work, but it's not hard work. It's more or less work you want to do. You know, there's always a purpose to what you're doing. Either you're putting something out for yourself or you're putting something out for someone else. So there's always a purpose to do the best you can. . . . Not to just look at certain things but to do the best job overall.

One principal said that without vocational education some students would lose interest in school--perhaps drop out--and that vocational education classes have a carryover into other classes.

> I see kids that are taking the vocational track program as

> being motivated for school in general because of those classes. I see that as essential. I think that they probably do better in their other classes because of it.

In the words of a student: "It has enthused and encouraged me."

Meeting individual needs. The structure and atmosphere of most vocational classrooms allow teachers to get to know their students well. Vocational education teachers spend a great deal of time circulating throughout the classroom and working with students one-on-one. Because of the relative informality of vocational classrooms, students often talk with vocational teachers about problems they're having in their relations with others and questions they have about career decisions. A vocational education director described the student-teacher relationship this way:

> Well, I think our teachers work more personally with their students (than do teachers) in a lot of the other areas. Because they have them for longer periods. And they almost become counselors--they are with them in extra activity functions and conferences. You really get to know those kids very well. And they come to you with their problems and you have an opportunity to be a role model and to guide them. And you get to know them on a more personal basis. You get to meet their parents and pick them up at their homes and go to picnics with them and so there's more of a guidance function I think in those programs.

According to a home economics teacher,

> We're unique because we can move around the classroom. The students are not in one desk. You can walk up to a student privately and hold a conversation about how you've been or what you see yourself doing in the future and what do you want to get out of this class.

Knowing students well should--and we think does--enable teachers to adapt their teaching to the individual learning needs of students. This might involve adjusting the content, objectives, learning activities, timing, feedback, or other variables to better match students' individual situations. For the most part, teachers in our study were seeking to raise both the "floor" and "ceiling" by matching learning challenges to students' skill levels.

Developing self-esteem. Vocational education classes also help students develop self-esteem. One component of self-esteem is the sense of competence and confidence that comes from experiences which indicate that one is able to meet challenges in the environment. The numerous projects and activities which are an integral part of vocational education provide opportunities for students to develop this sense of competence and confidence. These projects and activities are usually tangible--something students can see, feel, taste, smell, and hear--and projects that provide clear and immediate feedback. A student in an industrial arts class told us about her experience in learning to run the printing presses.

> At first it's presses and I thought, "No way am I ever going to run that." And I kind of put it as a goal to myself to learn how to run this thing and to run something off myself. And when I did it, I was really happy with myself. The first time I ran something off I just thought, "Wow!" I brought it home and showed it to my dad. . . . And he was asking me, "Did your teacher help you with this? Your teacher must have helped you with this." And I said, "No, I did it all by myself."

Our observation data set is full of examples of teachers encouraging students to accept new challenges and try harder--to discover and build competencies that they didn't know they had or could develop.

Another component of self-esteem is a sense of status--a sense one has that others perceive him or her as competent. We saw many instances of teachers recognizing and praising students' efforts, indicating to them that they perceived them as competent. A teacher in a business and office education class pointed out the importance of helping students develop a feeling of being valued.

> A lot of people have poor self-image. And I think part of the idea of the voc ed program (especially for) . . . a lot of kids in the lower end of the class rank is to include the idea of self-image and self-worth. Show that they have importance and show that they have something to contribute. Because there are lots of kids academically on the scale that don't have anything knowledge-wise like that to contribute. And to show the value of what they have. Because everybody has to find their niche. A lot of kids don't perform well in school because they don't see any value in themselves. I was talking to Ron, the big guy's mother yesterday, and she said the problem that he's always had with all of his teachers--and it's sad--the boy is told he is dumb. Or he's not going to be able to do well. Whereas like myself, I never tell a student they're dumb. I never attack them personally, just structure the behavior, change the behavior.

Teachers praise and recognize students' achievements individually and privately; they also give and encourage others to give collective and public applause. For example, after an occupational food service class had finished cleaning up after its noon restaurant activity, the teacher announced,

> Okay, guys, those dishwashers have done a tremendous job. Let's give them a hand!

Lest we leave the impression that the teachers in our study were saints, we should acknowledge that we observed a few cases of teachers yelling at students and making comments to them which wouldn't be helpful to students. For example, we observed a student taking her project to the teacher and the teacher snapped, "What are you showing it to me for? You've got two eyeballs."

Providing adequate equipment. Some vocational education programs emphasize the development of job-relevant skills more than other programs. For those programs that do place a relative emphasis on developing job skills, the quality and quantity of equipment for students to use in developing those skills is a concern. Is the equipment available for students' use consistent with that which they're likely to encounter on the job? Is enough equipment available so that all students can develop the desired skills? To the extent that the equipment is similar to that which students will be expected to use on the job and to the extent that sufficient equipment is available for all students, educational opportunities are provided to students.

The classrooms in our study varied in the extent to which the equipment was job-relevant and sufficient in quantity. Teachers expressed concern for obtaining up-to-date equipment and some questioned how resources were distributed in the school. On what basis are resources distributed between vocational and nonvocational programs in the school? And how are resources distributed among vocational programs themselves? We don't have answers to these questions but think that they need attention as part of any consideration about equity in vocational education.

Outcomes of Vocational Education

The central equity question related to outcomes of vocational education is: To what extent and in what ways does vocational education in the secondary school actually enhance the quality of students' lives in the long run? More specifically, we can ask: Does vocational education help students identify and select careers they find meaningful? Does vocational education enable students to obtain jobs or gain admittance to further educational programs? Does vocational education help students gain access to the opportunities and wealth that others enjoy? Is vocational education a liberating or enslaving force in students lives?

Our study was not designed to collect evidence about actual outcomes of vocational education. However, as we talked with people associated with vocational education, we obtained evidence of what they anticipated or projected as outcomes. Our analysis of anticipated outcomes is divided into what students expect to realize as a result of having taken vocational education and what teachers, counselors, and administrators say are outcomes.

Expectations of Students

Most students (about 80%) seemed to elect vocational education courses because of a fairly immediate interest in learning some particular content (e.g., "to learn about cars and engines"), and most students (again about 80%) felt that the course they were taking would help them in what they planned to be doing a year after they left high school. For example, they said the course would help them know.

> How to start a farm, how to manage a farm.
>
> How to run a shop plus get along with all the guys.

Although students thought the courses would be helpful to them in the future and although they indicated some ways in which they anticipated such help, students didn't articulate specific and firm links between their vocational education experiences and their futures. The generality of responses could be due to several factors, such as the way the questions were worded, the limitations of a paper-and-pencil device for eliciting depth of response, the developmental stage of the students, and, of course, a genuinely vague but hopeful view that somehow this course would pay off in their futures. Related to this, we might ask: Do we as vocational educators articulate clear and specific connections between high school programs and long-term results? Or are we also fairly general and nonspecific? Are general and nonspecific responses the most appropriate and honest? What can we promise, if anything? What links do we see between vocational education in the secondary school and students' futures? Do we talk about such outcomes only at professional meetings, or do we discuss these ideas with students?

We also asked students what they thought they'd be doing a year after high school graduation. Contrary to the expectations of teachers, counselors, and administrators, about 70% of the students said they expected to pursue some form of education beyond high school. About 60% of these thought they'd go to a postsecondary vocational school, and the other 40% expected to go to college. Approximately 25% said they would seek full-time employment, and 5% intended to enter the military service.

Regardless of whether students continue their formal education beyond high school, become full-time workers, or volunteer for military service, they might all be able to draw upon their vocational education experiences. Most students thought they would.

Expectations of Teachers, Counselors, and Administrators

Teachers, counselors, and administrators said that they believe that vocational education helps students explore career options, prepare for further schooling, and develop specific job-related skills. More specifically, these adults think that vocational education courses serve students in the long term by laying a foundation for other learning and vocational experiences and by developing students' self-confidence. The following two excerpts from teachers' interviews illustrate these points, respectively.

> If I can get a student in child development who can use that for a basis for being an aide in a pre-school or whatever, that's an opportunity. I would hope that I can give students that opportunity through those classes. Opportunities in the food class to go into food service area. "Oh, I've had a course in Food--I at least understand this." Hopefully that's going to be an opportunity for that student to help them. Yes, I see us as being able to help students . . . some vocational career opportunities I hope would have an edge over that student who hasn't taken that kind of course.
>
> Vocational education is filled with a lot of nutsy boltsy can-do. The more things that you can do, the better you feel

about yourself, I think. The ability to fix something, to understand something because you've done it because you've taken it apart. I think that positive self-image, that self-confidence spills into every other thing they do then. They may become a medical doctor, but that self-confidence helps them in their school, in their interpersonal relationships.

When asked if vocational education courses limit students' opportunities, teachers, counselors, and administrators tended to agree that enrollment in vocational education courses sometimes resulted in an unbalanced curriculum for students. Sometimes this occurs when students elect double-period vocational courses and when they take several vocational courses. A counselor told us,

> Well, I think some students tend to take more vocational classes than they should, and, therefore, may be bypassing some other skill areas, say furthering their math skills, continuing math beyond the basics, or science. We have students who will take a food service class for a couple of years. And I don't know--because I'm not in the classroom--how many new skills they're developing after they've had it for a year. I think they tend to take, for example, maybe a lot of shop classes. We have kids who maybe will take a wood shop several semesters or a metal shop several semesters, whereas they can maybe further those skills but I'm not so sure with, you know, the kinds of machinery we have and materials that we have, if they're really gaining that much ground by continuing those classes when they could be maybe taking more variety of things.

Because students are given considerable freedom in selecting high school courses, some choose vocational education courses for certain reasons only to find out later that their choices turned out to limit or at least complicate their future opportunities. A counselor described this situation.

> Well, ya, but it's not vocational education's fault. It's the student's fault. . . . A student who somehow has the perception that vocational education programs are the only ones he can pass or she can pass, or who is just saying, "Hey, I'm going through high school with the easiest route possible." And then end up going out of school and later having some career options that they may want to consider down the road--that they didn't have the advanced math and they took what they thought was the easiest route. But that's not vocational education's fault. That's the student's fault.

Unanswered Questions About Fairness

This chapter has presented some of our findings about practices which affect the extent to which vocational education provides equitable educational experiences for students. Our study indicates that within vocational classrooms--at least within "good" vocational classrooms--resources are distributed equally when students are alike and unequally when students are not alike. Students who need special attention, help, and encouragement seem to get it.

Where our study raises troublesome questions is in the area of access. One set of questions is about students who don't take vocational education: Are some students who could benefit from vocational education not electing it because of stereotypes and elitist views about "doers" versus "thinkers?" Would some students who avoid vocational education realize that it provides for expression and development of skills which are rewarding--intrinsically if not extrinsically? Should vocational education become more accessible to more students?

Another set of questions is about students who do take vocational education: Does vocational education expand or limit their opportunities in life? Does vocational education merely reinforce and perpetuate class privileges and punishments, or does it enable them to share in society's riches and experience "the good life?"

Postscript

I think everybody needs to be served in the manner that best fits them within this school. (Teacher)

CHAPTER XVI

REFLECTIONS

This chapter is organized into two sections describing: (1) reflections about the study process, and (2) reflections about the purposes already discribed for vocational education as practiced in the secondary schools included in this study. The first section is aimed at making the reader more aware of the study process, its strengths and limitations. The second section focuses on looking across the previously described purpose statements for more general implications for policy making, practice, and further research.

Reflections About the Study Process

Design. As a research project draws to a close it is useful to think back to the process of the study and think about the positive aspects as well as learn from mistakes which were made. One of our initial concerns was how we, as researchers, would be received in the schools; we were outsiders and the teachers and administrators would get no direct or immediate benefit as a result of our intrusion. Our concerns were unfounded, however, and we received a warm welcome into the schools. We were not allowed to observe in some schools we contacted for legitimate reasons such as work load or scheduling difficulties.

The teachers in the selected classes were particularly helpful and cooperative; they answered our questions willingly and a real sense of trust seemed to develop. We soon got to know the teachers well and felt the information they gave was accurate. We had a sense that what happened in the classes was typical and real since it would have been difficult to mask typical behavior and responses over a three-week period. Although we felt the same sense of cooperation from administrators and counselors, the time spent with them was limited to our scheduled interview and we did not develop the same relaxed relationship.

We deliberately set out to gather various kinds of data which would help us understand what is happening in vocational education classes. We knew that to focus on just teachers, just students, or just curriculum would give us a one-dimensional view of the classroom--and we wanted more. Our attempt was to look at the "whole" of what was happening, even though we knew the task would be monumental.

We observed and took notes on what we saw happening in the classroom in a systematic way and took observation notes on significant events before and after class or during times when we were not formally observing. We formally interviewed students, teachers, administrators, and counselors, and noted relevant informal conversation.

All students in the classes observed were asked to complete a student survey which asked them questions about their experience in a vocational education classroom. We collected printed material such as tests, worksheets, or other

handouts which were used in the class as well as school course descriptions and information about the community. We took photographs of the classrooms and verbally described the surrounding community. Thus, we made an attempt to have the story told in several ways which helped give us a more accurate picture of what was taking place.

We were not able to re-interview people to verify data or to follow up on questions. Interviews were scheduled and completed with no time or opportunity to go back and talk with people again except for teachers. This would have been useful in filling in some gaps in our data. We also would have liked to have spent more time interviewing students since students seemed more inhibited and less comfortable in the interview process than adults. We typically spent 15 to 30 minutes with each student which was not enough time to develop the desired rapport.

Analysis. As we began to analyze the data we realized we had a great deal of information--we had uncovered more than we had expected. There was ample data to support the purposes we had identified, as well as information which would address research questions not deliniated in this study. For example, we were interested to note the behavior of students when there are substitute teachers in the classroom. The teaching methods used in vocational education could also be examined by way of our data.

However, the focus of our study was on purposes of vocational education and the data provided solid evidence to support the purposes which emerged. In fact, these purposes would probably have emerged with fewer interviews and observations.

A word to the wise. Researchers planning to undertake a project similar to this might consider three general recommendations we would make as a result of our mistakes. First, spend time at the beginning of the study training researchers for the task at hand. Skills in recording observations and interviewing participants need to be developed to a high level of competence. There should also be a common understanding of the task which will guide the data gathering process.

Second, a research project such as this requires both a short-term and a long-term commitment. Interviewing and observing is exhausting. Gathering and analyzing data and reporting results, in our case, took two and one-half years. The researchers must be able to maintain a high degree of commitment during this time. Analyzing thousands of pages of notes becomes tedious and it is easy to lose momentum and let the process bog down.

Third, the research team needs to maintain effective communication throughout the project. This requires the availability of common meeting times as well as a genuine interest in maintaining a good working relationship. This effective communication facilitates a common understanding of the processes and goals of the project during each phase. Time needs to be taken to work out unanticipated snags as they occur so as not to jeopardize the future processes of the project.

Limitations. Any conclusions regarding the purposes of vocational education in the secondary schools need to be considered in light of the limitations of the study. Throughout this study we made an effort to identify purposes of vocational education. However, it is difficult to find out what is in peoples' heads. For example, we tried to find out why students signed up for the course--what the purpose of the course was from their perspective. We cannot be sure they told us how they truly feel, or that they can conceptualize and verbalize all of those feelings. Any conclusions we draw in this study comes from inferences about what we observed and what was verbally stated, and our inferences may be inaccurate, or at least not complete.

The sample for this study was drawn purposefully. We choose "good" programs where vocational education is working well. It was felt that these classes would be led by teachers who would be able to share their story with us and not be inhibited by our presence in the classroom. This means, however, that we did not have a representative range in quality of vocational education classes. The sample of classes also included representation from all the fields within vocational education. However, there is a wide range of programs even within each field. For example, programs within home economics education may focus on family life education, consumer education, or occupational home economics. The classes included in our study did not capture the range of programs available in secondary vocational education. There were also times when we were concerned that classes might have taken on a particular character or reflected a certain set of purposes because of the particular person who was teaching the class. In summary, the sites, classes, and teachers were limited, and caution must be taken not to be compelled to generalize to all of vocational education from the findings in this study but rather to use the findings to try to better understand the purposes of vocational education in secondary schools.

This study was conducted in the spring of the year and data gathering was completed just prior to the end of the school year. For some students it was the end of their senior year in high school. One teacher acknowledged that the last half of the year for seniors was difficult in terms of teaching because students were so involved in prom, graduation, and employment or education plans that students had difficulty concentrating on school work. Gathering the data in the spring of the year may have influenced results to some extent, but we were not aware of what that influence might be.

The magnitude of the study required the use of five researchers to observe the activity in the classroom and conduct interviews. The use of multiple observers affects the reliability of the data collected. One of the frustrations we experienced was deciding what to focus on as we recorded observations. Our guide was to focus on what had relevance in terms of purpose. However, that became very broad. There may well have been times when our individual lenses filtered out things which were relevant or perceived things to be relevant which were not.

A final limitation involved our ability to communicate what we saw as a group. There are three assumptions which we must make in order to conclude that our findings are accurate. First, we must conclude that what each of us saw and recorded, or in the case of interviews, what we probed for, was relevant to the research question. Second, we must conclude that a summary or compilation of

that information is a justifiable way to represent what we saw. Third, we must conclude that we can accurately describe those findings in a summary report. Whether or not all of those assumptions are true influences the credibility of our findings.

Although anyone reading this report might suggest other limitations, these are the ones which we as researchers struggled with and found most troubling.

Reflections Across Purposes

Different perceptions of students and adults. As we talked with students and adults in the school we realized that the kinds of responses they gave were usually different. One difference seemed to stem from the differing time horizons of student and adult thinking. Students' responses were more likely to refer to short-term benefits of vocational education, and adults were more likely to make references to long-term benefits. An example was a student who said the most important thing learned in an agriculture class was welding. Whereas, the student's teacher might indicate that the student was learning a skill which would be of long-term vocational benefit to that student.

Another difference between student and adult responses involved perceptions regarding the students' destinies. Students in the vocational education classes we observed were asked to complete a survey which included a question about their plans for the year after they leave high school. We found that 70% of the students anticipated going on to some form of education. Of this 70%, approximately 40% planned to go on to college and approximately 60% planned to go on to some type of vocational school. However, in asking their teachers how many they expected to go on to further education, the percentage was considerably lower. In 1984 in Minnesota, only 57% of high school graduates who had been out of school for one year were enrolled in some type of postsecondary education. Therefore, either the students in our study are unrealistic about their future goals and abilities or they are unwilling to admit to themselves or others that further education is not part of their future.

These differing perceptions on the part of students and adults in the school indicate a need for students to think beyond the school situation. Students need to be encouraged to think about the linkages between what happens in the classroom and the skills and abilities that students need outside of class and will need in the future. For example, a teacher might explicitly make reference to the usefulness of management skills in numerous careers, not only the particular career associated with a vocational education class or only the particular task which is at hand that day in the classroom. Students may be at a developmental level which restricts thinking at the more abstract levels. However, high school students are developmentally moving from concrete to abstract thinking and, therefore, should be regularly challenged to make these linkages.

We also saw a need for dialogue between students and adults in the school for the purpose of understanding each others' perceptions. Throughout this report we have described how students get "pumped up" in vocational education; how learning experiences in vocational education help make students feel good

about who they are and the skills they possess; they acquire self-confidence and courage. But can students be "pumped up" too much? Can students become unrealistic about their real skills and abilities? Is this what has happened when 70% of the students in the vocational education classes we observed expect to go on to further education, while teachers have a quite different perception of their destinies? Increased opportunities for dialogue would help identify, if not resolve, inaccurate perceptions on the parts of both students and adults.

Purposes are implicit. At the onset of this study we anticipated finding evidence of exploration and preparation for work or further education, since they are historical themes of vocational education. However, what we did not expect to find was the numerous other purposes which we found recurring in the classroom. Several of these purposes such as application, competence, and working relationships would not be evident to the casual observer and would not be spelled out in a course outline. It took several days of observing as well as countless hours of interviews to uncover some of these purposes. And yet, once they were identified we saw them recurring again and again, often in subtle ways. Teachers differ greatly as to the extent to which they put these purposes into practice. Some teachers were very explicit in describing and putting purposes into practice and others were more unaware of the purposes they were implementing. However, as we learned more about practices in vocational education classrooms, we began to speculate that these implicit or less obvious purposes may be, in fact, the glue which connects all vocational education classes. For example, the development of competence, even though implicit, might be more pervasive than the more obvious purposes we attribute to vocational education. We suspect that these more implicit purposes are evident in other areas of the school curriculum as well, and are not unique to vocational education. However, this study indicates vocational education encompasses a rich array of purposes which are not typically associated with vocational education.

We suggest that some common agreement and understanding of purposes of vocational education would be useful. This common understanding would facilitate policy development, curriculum writing, and implementation of vocational education programs. It would also aid in understanding how vocational education fits into the overall purpose of secondary education as well as how it links to other curricular areas. However, one also might argue that the fields within vocational education (i.e., agriculture, business, home economics) are, indeed, different, and uniform purposes would be detrimental to the unique qualities and contribution each field could make. This needs to be sorted out through discussion and reflection. We can conclude, however, that it is important that the purpose of each class be made explicit to students, counselors, administrators, and parents. There should also be tangible evidence that these purposes are in fact, being incorporated into the curriculum.

Purposes in addition to technical. The many purposes which were identified by our study made it evident that vocational education is not synonymous with only technical learning, but rather vocational education has multiple purposes. We have noted that in addition to the technical learning that takes place in the classroom, many of the purposes have a humanistic dimension to them. For example change of pace, competence, going on stage, relevance, exploration, and equity all contribute to the development of the self. The focus is on meeting

the individual student needs in the context of a society which is close at hand. Therefore, in addition to the technical learning which is taking place there is also the emphasis on the human dimension.

The purposes of vocational education, in addition to technical learning, do contribute to general education. Vocational education aids in preparing the student for a role in society, preparing the student to become a responsible member of society. In fact, some would say vocational education is the area within the comprehensive high school which contributes most effectively to the general education of students.

Goodlad (1984), in A Place Called School, describes how parents, students, and teachers want vocational, intellectual, personal, and social goals to be important aspects of the school curriculum. As Goodlad says, "We want it all." Parents are concerned with how their children will deal with the world once they are out on their own--how each individual child fits into society. Our data indicates vocational education does address those concerns. Vocational education contributes significantly to the general education of students and, therefore, should be viewed as an integral part of the comprehensive high school.

Purposes are interacting and overlapping. As we analyzed the data from this study we made an effort to identify purposes which were "pure" and did not overlap with other purposes. This task was accomplished after much effort. However, when we had finished analyzing the data we again began to speculate how the purposes might be related to each other. We thought about clusters of purposes. For example, there might be two categories of purposes, one being humanistic in nature and the other concerned with skill development. These two categories of purposes would both support the goal of preparing the student for school or work. Or one could think about a chain effect. For example technical learning may lead to thinking through problems, which may lead to building competence, which may help prepare a student for going on stage with life roles. Speculation about relationships among purposes could be endless and at this time, somewhat premature. It is difficult to think about one purpose, however, without having thoughts about implications for other purposes.

These constructs or purposes were created as we analyzed the data. Further research may reveal other constructs which are more appropriate or provide a more accurate description of what happens in vocational education classrooms. Our hope is that these purposes might be useful beginnings to think about practice in vocational education classes.

These purposes do not provide clear-cut prescriptions about policy or curriculum development. Several of these purposes are difficult to conceptualize, and even more difficult to measure because of their abstract nature. Thus, we have undoubtedly created both frustration and, hopefully, the possibility of new visions for vocational education. This study was exploratory and it would seem likely that further research could conceptualize purposes in other ways. However, as purposes are further refined and agreed upon, they can be translated into more sensitive indicators to plan, review and provide public information about vocational education.

Over all good feeling. Vocational education is seen by some as an "off broadway" program, and students enrolled in the program are considered "second

class." However, students enrolled in the classes we observed generally felt very good about their involvement even though they were well aware of how others viewed the class. Some students enrolled in the class explained that others did not really understand what went on in vocational education. How have the real purposes and accomplishments of vocational education become such a well kept secret?

We, as researchers knowledgeable in the area of vocational education and education in general, also felt very good about what happened in these classes. We saw committed teachers who were concerned about the educational and personal well-being of each student. The more time we spent observing the class and talking with students and adults, the more we understood what was happening. We liked what we saw; we appreciated the "richness" of the educational experience which was provided. We were often heard saying to each other, "I would like my child to be in that class."

The contradiction between the questioning which is presently going on regarding vocational education and the good feeling we and the students experienced began to make us feel uncomfortable. Why is there so much neglect or overt criticism of vocational education when we saw so many good things happening? How do students deal with this inconsistency of feeling good about the program and knowing others see them as being second class because they are enrolled in vocational education? Are members of society and school leaders imposing a value system on vocational education which is unjust or unfair to those enrolled? Or, is there really a problem with vocational education that is of a different dimension than was explored in this study? The members of the research team have not resolved these issues, but rather, have made an effort to ask the questions.

Ethics and aesthetics are largely absent. When one considers what should be present in vocational education curriculum at the secondary level, it is likely that scholars such as Dewey would include ethics and aesthetics. In 1985 the Minnesota Research and Development Center published a monograph entitled Purposes of Vocational Education in the Secondary School. As a result of reading the works of past and present leaders in vocational education, it appeared appropriate to include ethics and aesthetics in a discussion of purposes of secondary vocational education. However, as we sat in classrooms and talked with students and adults in the school, we found that explicit discussions about the ethics and aesthetics of work and what they were learning were conspicuously absent. There were numerous opportunities for addressing these concepts; however, they were generally not raised up for discussion. For example, one student made a derogatory remark in class about blacks. The teacher responded negatively, letting the student know the comment was inappropriate. However, there was no discussion about the implications of such comments or how such an attitude might have developed on the part of the student, either with the student privately or with the entire class (at least as far as we know).

The equitable treatment of students in the class also becomes an ethical concern in vocational education. Generally, students were treated in a fair and just manner in the classes we observed. Students who were special in some way were given opportunities to excel in spite of limitations. Although this

treatment was not discussed openly, appropriate behavior was modeled by adults and students generally followed that example. Problems of individual students were handled in subtle and sensitive ways.

Aesthetic discussions could have occurred numerous times in the classes in our study--when a printing job was completed with precision and expertise and the final product was truly a work of art. Or a discussion could have occurred regarding the aesthetic qualities of a satisfying personal relationship.

We might also question the need for aesthetic and ethical issues to become an explicit part of the classroom curriculum. One perspective is that if you need to think about equity in vocational education classes and make the issue explicit you really don't have equity. Is this also true of aesthetics and ethics? Modeling behavior on the part of the teacher and allowing students to personally experience the aesthetic value of products and experiences may be sufficient and even superior to make an issue of such intangible concerns. On the other hand, students, parents, and school officials could be aware of and openly discuss all learning that is taking place in a classroom in order that this learning may be examined and evaluated as to its morality, intellectual soundness, and usefulness.

Status of vocational education--and is it for everyone? These two issues seem to go together because the status of vocational education in our society has implications for which students will have access to and choose to enroll in the program. According to some students and school adults, vocational education is seen as having lower status in relation to other subject areas in the school. The people we talked with would add that, of course, they didn't feel this way, but "others" did. "Others" were different for the various people we interviewed. For students it seemed to be peers and teachers in the academic area. For teachers "others" sometimes referred to the administration, the school board, parents, and society in general. The people we interviewed were making efforts to try to change this low-status perception. These people were also feeling frustrated because even with their efforts very often the results, because of factors such as the Nation at Risk report, were diminishing vocational education programs and no real change in how "others" viewed vocational education.

The students who enrolled in vocational education were sometimes viewed as sluff-offs, students who were not capable of dealing with the work in other classes, or those who weren't going to college. Those "not going to college" seemed to be viewed as different, and, unfortunately are sometimes not seen as being as precious to the school. Students in vocational education classes were aware of how others saw them, but in the majority of cases would conclude they liked the class and felt good about what they were learning. We became aware of the conflict students must feel, supporting and benefitting from a program which others saw as inadequate. How does this affect students' attitudes about who they are and their place in society. The teachers were also affected by this conflict. They continued to teach in the midst of staff lay-offs and budget cuts, and their destiny seemed to be controlled by those who did not understand their goals and purposes and all the good they were doing.

Why is vocational education sometimes seen as having lower status in relation to other programing in the school? Many might say it is due to the recent trend to return to the basics which has gotten so much press. Most seem to express a sense of being misunderstood--"If only people could know what we accomplish in here." There appears to be a real need to educate all of society as to the purposes and goals of vocational education. However, the climate for this education may not be positive at the present time. The motives of those providing leadership for educating about vocational education may be viewed by "others" as suspect and being merely spirited by survival. We must also watch for this in ourselves, or what is thought to be educational will become propaganda. But the pendulum may swing and there may be legislative support again in the future. We have seen this occur in the past.

What to do about the image? Educating people about what does happen in vocational education classes may be a good first step which is a major goal of this study. But there seems to be a resistance in society regarding the kind of work students in vocational education classes end up doing which has not changed over time. Even when there was legislative support for vocational education, students enrolled were seen as lower class. Can that be changed? The answer to this question goes beyond the school. Can members of society change their attitudes toward the value of various types of work? If not, how is this to be handled by vocational educators? By its students?

The answer to the question regarding whether vocational education is for everyone may depend on the two questions posed above. Can we effectively educate individuals as to the purposes and goals of vocational education? And, if we can, will that educational process effectively overcome the view members of society have regarding the kinds of work students are preparing for in vocational education classes? Vocational education will not be seen as acceptable for everyone until members of society recognize the value and worth of all types of work.

APPENDIX A

Date:
Time:
Observer:
School and Class Code:

Observation Transcription for a Segment
(Timed Observation)

Description (Try to address dialogue, characteristics of people, setting, and activities as well as other aspects which seem relevant.)	Inferences or Questions (Particularly about equity and purpose)

APPENDIX B

IT308NN6 SCRIPT

000001 Date: 3/8/84
000002 Time: 11:20 Observation Transcription for a
000003 Observer: PC Segment
000004 School and Class Code: B (Timed Observations)
000005
000006

000007 Discription (Try to address dialogue, characteristics of people, 000008 setting, and activities as well as other aspects 000009 which seem relevant) 000010	Inferences or Questions (Particularly about equity and purpose)
000011 000012 000013 Teacher is standing over Julie. 000014 J.: "I can't figure this out." 000015 Teacher: "What do you want to do?" 000016 J: "I want to delete this on the bottom." 000017 Teacher leans over "Just get it down here." Pushes 000018 return - machine returns once and then doesn't respond. 000019 T.: "You're at the bottom." 000020 J. says something, pushes another key. The machine gets 000021 to the right point. 000022 T: "Now what do you want to do?" 000023 J: Gives a low inaudiable reply and does something else 000024 - the deletion is completed. 000025 Jana looks up toward teacher obviously pleased. 000026 "Thank you" Teacher starts to walk away, "I didn't help 000027 you though. You figured it out yourself."	Although I couldn't get all of the dialogue, this episode illustrates a nice example of applied problem solving.

APPENDIX C

Superintendent/Assistant Superintendent/Principal/
Assistant Principal and Counselor

1. How does vocational education fit into the total program of the school?

2. Perhaps there are ways in which the vocational education program is the same as other programs in the school and ways in which it is different. How is vocational education similar to other programs in the school?

3. How is it different?

4. What do you think is the most important thing a secondary school can provide a student.

+5. In what ways is your school striving to provide this (response to question 4) for students?

6. Some people are questioning whether vocational education has a place in the secondary school. What do you think?

*7. Some people think secondary vocational education should help students explore occupations, others think it is to train for specific jobs, others see it as preparation for further education. What do you see as a priority?

8. Who do you think vocational education is serving?

9. Is that who it should serve?

10. In what ways does vocational education affect students?

11. In what ways does vocational education increase opportunities for students?

12. In what ways does it limit opportunities?

13. Now I'd like to shift to a couple questions about equity. People seem to have different ideas about what equity means. What does it mean to you?

*14. Then, given that meaning of equity, to what extent do you think vocational education programs in this school provide equitable experiences for students?

15. What difficulties do you find in trying to provide equitable experiences for students?

+16. Is vocational education relevant to the needs of the local community?

17. From this discussion can you summarize for me what you see as the purpose of vocational education?

18. What would you like the purpose to be?

+19. How have you gained your knowledge of vocational education?

20. In what ways could vocational education be improved in this school?

21. Do you have any written statement or brochures that you might give me that relate to what we've been talking about?

*Most important to probe for clarification and elaboration.
+Least important to probe; might even be deleted if time runs short.

Vocational Education Director

1. Would you describe for me, in a couple of minutes, the scope of your vocational education program?

2. How does vocational education fit into the total program of the school?

3. Perhaps there are ways in which the vocational education program is the same as other programs in the school and ways in which it is different. How do you see vocational education the same as other programs in the school?

4. How do you see it differently?

5. What role do you think vocational education has in the lives of the students in the program?

6. What is the most important thing a secondary school can provide a student?

+7. We have been talking about secondary education in general. Now let's focus specifically on vocational education. What are you, personally, trying to offer to students in vocational education?

8. Have your views on that (response to question 6) changed over the years?

*9. Some people think secondary vocational education should help students explore occupations, others think it is to train for specific jobs, others see it as preparation for further education. What do you see as a priority?

10. Do you see vocational education as providing more of one type of learning experience over others?

11. Do you think students apply what they are learning from vocational education to other classes they may be taking?

12. Do students apply what they learn in other classes to vocational education?

13. Who do you think vocational education is serving?

14. In what ways does vocational education affect students?

15. In what ways does vocational education increase opportunities for students?

16. In what ways does it limit opportunities?

17. Is vocational education relevant to the needs of the local community?

18. Now I'd like to shift to a couple questions about equity. People seem to have different ideas about what equity means. What does it mean to you.

19. Then, given that meaning of equity, to what extent do you think vocational education programs in this school provide equitable experiences for students?

*Most important to probe for clarification and elaboration.
+Least important to probe; might even be deleted if time runs short.

Vocational Education Director (Continued)

20. What difficulties do you find in trying to provide equitable experiences for students?

+21. In what ways could vocational education be improved in this school?

22. From this discussion can you summarize for me what you see as the purpose of vocational education?

23. What would you like that purpose to be?

24. Do you have any written statements or brochures that you might be willing to let me have that relate to what we've been talking about?

+Least important to probe; might even be deleted if time runs short.

Teachers

I'm going to ask you some questions that relate to all the teaching you do at this school. Then I will ask you more specifically about the class we have observed. In relation to your position as a teacher here in this school:

1. What do you see as the most important part of your job?

+2. What has experience in teaching taught you about how or what to teach?

+3. In the area you teach, how important is work experience for your teaching effectiveness?

4. How do you decide what to teach?

5. How do you prioritize topics or learning experiences?

6. Do you feel support from the rest of the school for your programs?

7. Perhaps there are ways in which the vocational education program is the same as other programs in the school and ways in which it is different. How is vocational education similar to other classes the school?

8. Some people think secondary vocational education should help students explore occupations, others think it is to train for specific jobs, others see it as preparation for further education. What do you see as the priority?

9. Who do you think vocational education is serving?

10. Is that who it should serve?

11. In what ways does vocational education affect students?

12. In what ways does vocational education increase opportunities for students?

13. In what ways does it limit opportunities?

14. Now I'd like to shift to a couple questions about equity. People seem to have different ideas about what equity means. What does it mean to you?

*15. Then, given that meaning of equity, to what extent do you think vocational education programs in this school provide equitable experiences for students?

16. What difficulties do you find in trying to provide equitable experiences for students?

17. Some people are questioning whether vocational education has a place in the secondary school. What do you think?

18. From this discussion can you summarize for me what you see as the purpose of vocational education?

19. What would you like the purpose to be?

20. Do you have any written statements or brochures that you might be willing to let me have that relate to what we've been talking about?

Teachers (continued)

Now let's talk specifically about the class which I have been observing.

1. What role do you see yourself having in the lives of the students in this class?

2. How do you see this class in relation to other classes in the school?

3. Do you think students apply what they are learning from this class to other classes they may be taking?

4. Do students apply what they learn in other classes in this class?

*Most important to probe for clarification and elaboration.
+Least important to probe; might even be deleted if time runs short.

Students

1. How would you describe this class to someone else?

2. I've just been in your school a short time and I'm wondering if this (however long the observer has been there) is what usually occurs or does it change?

*3. Why are you taking this class?

4. Did anyone encourage you to take this class?

5. Did anyone discourage you?

*6. What kinds of students benefit most from this class?

7. Are students in this class treated pretty much the same?

8. In what ways is this class meeting your needs and interests?

9. In what ways could it better meet your needs and interests?

+10. How is this class different from other classes?

+11. How is it the same?

12. Do you see what you learn in this class as being useful in other courses you have been taking.

13. Do you see what you learn in other courses you're taking as being useful in this class?

14. How do you think other teachers feel about this class?

15. How about other students in the school?

16. What is the most important thing a high school can provide a student?

17. What do you think you'll be doing a year after you graduate?

18. Five years after you graduate?

19. Is this class going to help you in what you see yourself doing after graduation?

20. From this discussion can you summarize for me what you see as the purpose of this class?

*Most important to probe for clarification and elaboration.
+Least important to probe; might even be deleted if time runs short.

APPENDIX D

STUDENT SURVEY

Your Age: _____

2. Your Sex (Circle One): Male Female

3. Your Grade in School: _____

4. Please list all the classes you are now taking. _____

_____

_____

_____

_____

_____

5. How is this class different from other classes you are now taking? _____

_____

_____

_____

6. How is this class the same as other classes you are now taking? _____

_____

_____

_____

7. Why are you taking this class? _____

_____

_____

8. What do you think is the purpose of this class? _____

_____

_____

9. What do you think your final grade in this class will be?

(Circle One)

A

B

C

D

F

10. What do you think your grade average for all your classes will be this year?

(Circle One)

A

B

C

D

F

11. Besides going to school, are you now employed? (Circle One) Yes No

If you are employed, how many <u>hours per week</u> are you working? _____

What is your job title? _____

12. During the first year after leaving high school, what will you probably do? (You may fill in more than one.)

Work at (kind of job) _____

Go to school at (kind of school) _____

(area of study) _____

Do neither, but instead will _____

_____

13. What do you think you'll be doing five years after you leave high school?

_____

14. Do you think this course helps prepare you for what you're planning to do <u>during the year</u> after you leave high school? (Circle One) Yes No

If yes, how? _____

_____

15. Does this course help prepare you for what you're planning to do <u>five years</u> after you leave high school? (Circle One) Yes No

If yes, how? _____

_____

16. Did anyone encourage you to take this class? (Circle One) Yes No

If yes, who? _____

17. Did anyone discourage you from taking this class? (Circle One) Yes No

If yes, who? _____

18. Compared to other classes you are now taking, how much are you learning in this class? (Check One)

_____ much more in this class

_____ more in this class

_____ about the same as other classes

_____ less in this class

_____ much less in this class

19. How many of your high school friends are in this class? (Check One)

_____ most of my friends

_____ some of my friends

_____ a few of my friends

_____ none of my friends

20. What are the two most valuable things you have learned in this class?

(1) _____

_____

(2) _____

_____

21. What student organizations, sports, clubs, or special events have you participated in this year at school? _____

_____

_____

22. What is the most important thing a high school can provide a student? _____

_____

_____

_____

_____

THANKS FOR SHARING THIS INFORMATION!

APPENDIX E

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Site Descriptions

Agriculture Education (School 1)*

The school is located in a small rural community. Vocational education programs are provided in the home high school as well as a joint secondary vocational center in cooperation with several other schools. The vocational agriculture program is managed and taught by one instructor. Class sizes vary from 15 to 30 with students coming from farm and town locations and consist of almost even proportions of males and females. The agricultural facilities are relatively new and well equipped; they consist of a classroom, office, shop, and greenhouse. The atmosphere in the program is informal yet serious in the study of agriculture. The Future Farmers of America Chapter is very active.

Agriculture Education (School 5)

The community where this program is located is largely rural but located within easy commuting distance to a large metropolitan area. Many of the residence of the town commute into the city for work. Students in the vocational agriculture program are almost all male and live on farms. Facilities consist of a classroom, office, and shop. The facilities, especially the shop, are furnished with older and worn tools and equipment. The Future Farmers of America Chapter is very active and almost all students participate in one event or another.

Business Education (School 2)

This program is housed in a vocational cooperative center which serves several school districts in a rural area. The model office program appears to be a typical office with telephones, typewriters and other office machines being used by the students. The students are working in different departments within this office and discuss both work and personal life as they interact with other students. The teacher is the "office manager" and spends part of his time walking around the room untangling snags in the operation of this teaching "office."

Business Education (School 4)

This class site is located in a high school in the metropolitan area of a large city which houses both junior and senior high students. The school has newer color-coordinated furnishings as does the business education classroom we observed. The classroom is set up like a business office with desks arranged in clusters with typewriters, calculators, and dictaphone machines on top of each desk. The noise level in the room raises as the machines get utilized. The classroom can take on a more traditional teaching atmosphere as the teacher stands behind a podium in the front of the room and students sit at the desks and take notes or participate in a class discussion.

*School number refers to Table 1, earlier in this report.

Distributive Education (School 7)

This classroom site is located in the same building as Site 4 and students are bussed to the school for the class. The classroom is "typical" in most respects having individual desks, bulletin boards, chalkboards, and bookcases. An English class uses this room the remainder of the day. There is a smaller room adjacent to the classroom which is used by the students and is not available to other departments in the school. There are cupboards, counters, and magazine displays. The room is used for DECA (Distributive Education Clubs of America) meetings as well as storing supplies for campaigns and sales activities. The two classes observed at this site experience several kinds of learning activities including lecture, films, tests, and individual and group activities.

Home Economics Education (School 3)

This school houses junior and senior high students and is located on the edge of a small rural town. The home economics classes are held in a home economics classroom which is equipped with appliances, kitchen tables and chairs, cupboards, and a computer. The students find this room a comfortable place to be and often come to class early or stay after class to talk with the teacher or visit with friends.

Home Economics Education (School 8)

This classroom site is located in a relatively old residential neighborhood of a large city. The school houses a diverse student population made up of several racial minorities. The food service classroom has two areas. The front area is similar to the front of a restaurant with a coat rack, a counter with a cash register, and several booths and tables where customers sit. The back of the room is the area where food is prepared ; it contains food preparation equipment--refrigerators, freezers, ranges, mixers, and dishwashers. On two days a week when the students serve lunch to about 80 people, the students' activities are typical of workers in a restaurant. On days the restaurant is not open, students study modules, take tests, and prepare food for either special orders or lunches to be served the next day.

Industrial Education (School 6)

This high school is located in a low to middle income, residential area of a large city. The school population reflects that of the surrounding neighborhood, being primarily Caucasian, with minimal Black and Oriental representation. The industrial education area has three separate rooms. The program is continuing to grow and up-to-date equipment reflects that growth. The students are usually involved in individual or group projects in this classroom and the teacher moves from student to student to provide supervision. The students have a great deal of freedom to move around the classroom areas depending upon their equipment and space needs, and usually are talking with other students as they do so.

Industrial Education (School 7)

This high school is part of a suburban community adjacent to a large city. This community is experiencing declining enrollment and is in the process of restructuring high schools. As a result, the majority of the students in the auto mechanics class are bussed from another high school. The auto mechanics class uses a well-equipped laboratory area where students worked on automobiles, as well as an adjacent classroom area which is used for the lectures, demonstrations, and written work. The students are free to walk around the laboratory area and work independently on projects and talk with other students and the teacher as they work.

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